PANDUAN PENULISAN

RANCANGAN PENGAJARAN HARIAN

BAHAGIAN PENDIDIKAN MENENGAH MARA

PANDUAN PENULISAN
RANCANGAN PENGAJARAN HARIAN

DISUSUN OLEH :

ROSILAWATI BINTI ABDUL RAHMAN

SITI RAHIL BINTI ISMAIL

NOOR NASRIYAH BINTI ABDULLAH

TINTA PENA

Syukur Alhamdulillah kerana dengan izin-Nya Panduan Penulisan Rancangan Pengajaran Harian (RPH) versi baharu ini dapat disiapkan dengan jayanya.

Panduan Penulisan RPH ini dihasilkan dengan bertunjangkan kepada *A Framework for Teaching* (AFFT). AFFT meliputi segala aspek dalam tanggungjawab seorang guru yang dapat dilihat melalui tugas-tugas harian mereka. Dalam usaha meningkatkan kualiti pendidikan, tidak boleh tidak seseorang pendidik itu haruslah merancang Pengajaran & Pembelajaran (PdP) yang bakal dilaksanakan dengan sebaik-baik perancangan. Bak kata pepatah Inggeris *"failing to plan is planning to fail"*. Ini bermakna kegagalan guru merancang PdP yang efisyen pasti akan merugikan pelbagai pihak.

Besarlah harapan saya agar panduan penulisan ini dapat dimanfaatkan oleh pihak maktab dalam usaha memantapkan lagi proses pengajaran, pembelajaran dan pemudahcaraan yang seterusnya membolehkan legasi sistem pendidikan di MRSM bertambah cemerlang seiring dengan perubahan pendidikan di peringkat global.

Akhir kata, saya ingin merakamkan ucapan penghargaan dan tahniah kepada semua pihak yang terlibat dalam menjayakan panduan penulisan ini.

KAMARUZAMAN BIN JAFFAR KMN

Pengarah
Bahagian Pendidikan Menengah MARA

PRAKATA

Assalamualaikum warahmatullahi wabarakatuh dan Salam 1MARA

Buku Panduan Penulisan Rancangan Pengajaran Harian ini dihasilkan dengan tujuan menjadi rujukan berinformasi kepada para pendidik di Maktab Rendah Sains MARA dalam merancang dan melaksanakan Pengajaran dan Pembelajaran (PdP) secara koheren dan holistik. Selaras dengan perkembangan dunia pendidikan global berteraskan Pendidikan Abad ke-21 (PAK 21), Bahagian Pendidikan Menengah (BPM) MARA komited untuk menjadi pusat kecemerlangan akademik, pemangkin kepada pembentukan sahsiah terpuji, cergas fizikal dan berbudaya entrepreneur dalam kalangan pelajar.

Buku ini diharap dapat dimanfaatkan sepenuhnya oleh pendidik MARA khususnya di MRSM dalam menjana pemikiran dan budaya kerja bersistematik, kreatif dan inovatif dalam pengajaran. Bersesuaian dengan Falsafah Pendidikan Kebangsaan, PdP perlulah menekankan aspek KBAT dengan berfokus kepada pendekatan Pengajaran & Pembelajaran Berasaskan Inkuiri, Berpusatkan Murid dan Berasaskan Projek serta memenuhi Profil Murid Abad ke-21 berdasarkan keperluan dalam Kurikulum Standard Sekolah Menengah (KSSM) yang mula diperkenalkan pada tahun 2017.

Penghasilan modul pengajaran yang memenuhi keperluan Kurikulum Standard Sekolah Menengah (KSSM) haruslah dilaksanakan secara bersama-sama melalui *Lesson Study* dalam *Professional Learning Community* (PLC) di maktab. Kita selaku warga pendidik haruslah menggembleng idea dan tenaga untuk merancang pengajaran dan pembelajaran yang bercirikan Pendidikan Abad ke-21 (PAK 21). Dalam mendepani cabaran pendidikan global yang mana Revolusi Industri 4.0 sebagai cabaran utama, maka warga pendidik MRSM harus terkedepan dalam melaksanakan PdP terbeza, istimewa, bermakna dan holistik.

Akhir kata, syabas dan tahniah kepada semua pihak yang terlibat menjayakan buku ini. Semoga Panduan Penulisan RPH ini menjadi panduan berguna kepada para pendidik untuk mendidik anak bangsa di MRSM kerana mereka inilah modal insan harapan nusa dan bangsa.

Sekian, terima kasih.

WAN AINIZAH BINTI ARIFFIN

Timbalan Pengarah I (Pembangunan Kurikulum)
Bahagian Pendidikan Menengah MARA

BAHAGIAN PENDIDIKAN MENENGAH MARA

SENARAI LAMPIRAN

BAHAGIAN PENDIDIKAN MENENGAH MARA

Templat Rancangan Pengajaran Harian
Daily Lesson Plan Template

RANCANGAN PENGAJARAN HARIAN SUBJEK : ……………………………..				
TINGKATAN			KELAS	
TARIKH		MINGGU	MASA	
TEMPAT			KEHADIRAN	
TEMA/TOPIK/ BIDANG PEMBELAJARAN				
STANDARD KANDUNGAN				
STANDARD PEMBELAJARAN				
OBJEKTIF PEMBELAJARAN/ KRITERIA KEJAYAAN	Pada akhir pengajaran dan pembelajaran, pelajar dapat :			
LANGKAH-LANGKAH	AKTIVITI PENGAJARAN & PEMBELAJARAN	PENTAKSIRAN FORMATIF		PEMBEZAAN
PENGLIBATAN PENEROKAAN PENERANGAN PENGEMBANGAN PENILAIAN PENUTUP/ RUMUSAN				
ELEMEN MERENTAS KURIKULUM (EMK)				
NILAI / SIKAP				
STRATEGI				
PEMBELAJARAN ABAD KE-21				

BAHAN BANTU BELAJAR/ SUMBER/ RUJUKAN	
REFLEKSI	
CATATAN	

DAILY LESSON PLAN					
SUBJECT : ……………………………..					
FORM				CLASS	
DATE		WEEK		TIME	
VENUE			ATTENDANCE		
THEME/TOPIC/ LEARNING AREA					
CONTENT STANDARD					
LEARNING STANDARD					
LEARNING OBJECTIVES/ SUCCESS CRITERIA	At the end of the lesson, a student is able to :				
STEPS	TEACHING & LEARNING ACTIVITIES		FORMATIVE ASSESSMENT		DIFFERENTIATION
ENGAGEMENT					
EXPLORATION					
EXPLANATION					
ELABORATION					
EVALUATION					
CLOSURE/ SUMMARISATION					
CROSS- CURRICULAR ELEMENTS					
VALUES / SIKAP					
STRATEGY					
21st LEARNING ACTIVITIES					

TEACHING & LEARNING AIDS/ SOURCES/ REFERENCES	
REFLECTION	
REMARKS	

BAHAGIAN PENDIDIKAN MENENGAH MARA

Pentaksiran Formatif
Formative Assessment

Focus On Student Learning - Instructional Strategies Series

Book Two:
60 Formative Assessment Strategies

By Natalie Regier, M. Ed.

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Book Two: 60 Formative Assessment Strategies
By: Natalie Regier

Note to Teachers

Focus on Student Learning is a series of teaching resources created to support teachers and save them time. Each booklet within the series takes one aspect of instruction and suggests multiple ways of using that instruction practice in the classroom. *Book Two: 60 Formative Assessment Strategies* provides teachers with a variety of strategies to gather information about their students during instruction.

Who is Natalie Regier?

First and foremost, I am a teacher. I have spent over 20 years in the classroom and have worked as a regular classroom teacher, a special educator, a vice principal and a learning coordinator. I have always been interested in finding ways to help students succeed in school. My search for knowledge to increase student learning has taken me to places like Edmonton, Boston, Orlando, and Las Vegas where I attended conferences and talked with educators from all over the world. As teachers, we all have one thing in common. We are searching for ways to help our students succeed in this ever-changing world. Helping every student in our classroom achieve is a challenge. I am continually searching for ways to support teachers with this challenge.   I am also a writer. Over the years, I have written over 40 teaching resources for *Davies and Johnson* and *Rainbow Horizons.* I enjoy writing and especially enjoy writing for teachers. I know how hectic the life of a teacher is and that time is a precious commodity. I am now dedicating my time to searching for information and creating resources to support teachers in the classroom. There are many changes occurring in education and teachers need to keep up with new curriculums, research-based instructional practices, and ways to increase the achievement level of their students. The teaching resources I create support teachers in understanding and implementing the changes in our education systems.

To learn more about my teaching resources, workshops, coaching and consulting visit my website at: www.regiereducationalresources.com

Visit my blog at: blog.regiereducationalresources.com

Let me know what type of resources I could offer that would support you in the classroom and save you time searching for ideas. Contact me at: natalie@regiereducationalresources.com

How does assessment fit into instruction?

Assessment and instruction go hand in hand in a classroom that focuses on the student. Teachers need to use a variety of different strategies to assess student readiness for a particular unit of study and to plan their instruction around the needs the students demonstrate. Ongoing assessment of student learning is an important part of the planning process.

There are three main types of assessment. They are pre-assessment, formative assessment, and summative assessment. This booklet focuses on strategies that teachers can use to formatively assess their students.

	Pre-assessment	Formative Assessment	Summative Assessment
What is it?	Assessment that is used to collect information about students.	Assessment that gathers information about student learning.	Assessment that shows what students have learned.
When is it used?	Before a lesson or new unit of study.	During a lesson or unit of study.	At the end of a lesson or unit of study.
Why is it used?	To determine the readiness level of students and to inform instruction.	To track students' progress and to make changes to instruction.	To provide evidence of what students learned.

What is formative assessment?

Formative assessment is a process that uses informal assessment strategies to gather information on student learning. Teachers determine what students are understanding and what they still need to learn to master a goal or outcome. Strategies used to gather formative assessment information take place during regular class instruction as formative assessment and instruction are closely linked. Most formative assessment strategies are quick and easy to use and fit seamlessly into the instruction process. The information gathered is never marked or graded. Descriptive feedback may accompany a formative assessment to let students know whether they have mastered an outcome or whether they require more practice.

When are formative assessment strategies used?

Formative assessment strategies are used throughout a unit of study. They are linked to the instruction and focus on discovering what students know and need to know about the end goal or outcome. Teachers use formative assessment during the learning process and use the information to make adjustments to their instruction to better satisfy learner needs. Using formative assessment over the course of a unit will provide teachers with information on the learning processes of their students. Teachers can use one assessment strategy, change or adapt the instruction, and then reassess using the same strategy or a different one to determine if the instructional practice is impacting student achievement.

Why are formative assessment strategies used?

Formative assessment strategies are used to check for understanding of student learning and to make decisions about current and future instruction. Through formative assessment, teachers can discover the rate at which students are learning, the current knowledge of students, what information or skills students still need to learn, and whether the learning opportunities they are providing for students is effective or if they need to change or adapt their instruction. Results of formative assessment drive instruction. If students are doing well and progressing as expected, teachers continue with their current instruction practices. If students are not progressing as expected and are missing key information or skills, teachers plan other learning opportunities to help students attain the information or skills they need to be successful.

During a unit on measurement in math, teachers may set up demonstration stations for students to show what they have learned using standard measures studied throughout the unit. As students participate in the demonstration stations, teachers focus on the process the students are using to attain a solution, as well as the solution itself.

How do I determine what type of formative assessment strategy to use?

Deciding on what type of formative assessment strategy to use will depend on a number of factors. Teachers need to determine what aspect of student learning they want to measure. They then need to consider the learning preferences of their students. Formative assessment strategies can be given to students individually, as partners, in small groups, or as a class. The type of grouping used for the formative assessment will also influence the choice of strategy. Teachers should not rely on one type of assessment strategy. A variety of individual and group formative assessment strategies should be used. Individual strategies allow teachers to get a clear picture of each student and their understanding of the concept or skill being measured. Group strategies provide teachers with general information about student learning that can be used to plan instruction. Students can also use formative assessment information to make changes to their learning.

How can teachers use the assessment information?

Teachers use formative assessment information to assess how their current instructional strategies are working with their students. If there are students who are struggling, teachers may need to work individually with a student, present information other ways, or adapt their current instructional strategy. Students who have appeared to master the outcome or goal being formatively assessed, may need to be further assessed or have learning opportunities planned that challenge them and are designed at their level of understanding. Teachers are also able to identify misunderstandings students may have and adapt their instruction accordingly.

How can students use the assessment information?

Students can use formative assessment information to determine what they need to do to achieve the goals or outcomes of the unit. Students may need to adapt or to change their learning to master curriculum outcomes. If students are not achieving at an expected rate, they can look at the strategies they are using for learning and decide whether they need to change their current learning strategies or adopt new ways of learning. The information provided by formative assessment strategies can also be used to help students reflect on current learning goals or set new goals.

FORMATIVE ASSESSMENT STRATEGIES FOR TEACHERS

1: ABC Brainstorming - Using the ABC brainstorming strategy with students midway through a unit provides you with information about what students have learned about a particular topic. Working individually, in pairs, in small groups, or as a class, students brainstorm words or phrases that begin with each letter of the alphabet and are related to the current unit of study. Midway through a unit on fire safety, students may write "meeting place" next to the "M" and "stop, drop, and roll" next to the letter "S." A glance through the brainstormed lists helps you determine what information is lacking and provides direction for planning opportunities that focus on these gaps in your students' learning. A graphic organizer that can be used with the ABC brainstorming assessment strategy is available at Student Handouts.

2: Analogies - A useful formative assessment strategy is to ask students to create an analogy between something they are familiar with and the new information they have learned. When asked to create an analogy for an atom, students may come up with an atom being like a community. The nucleus of the atom is like your immediate family. The electrons that fly around the nucleus are like members of the community that you may or may not interact with on a regular basis. Asking students to explain their analogies will show the depth of their understanding about a topic.

3: Checklists - Class checklists are a great tool for collecting data about students during a unit of study. Before beginning a new unit, make a list of all the skills students will need to demonstrate mastery of the unit's outcome(s). On a chart, list the students names down the left hand side and the skills across the top. Clip the chart to a clipboard and position it in an easily accessible place. As students are participating in various learning opportunities, observe the students and check off the skills you see students demonstrating with proficiency. Here is an example of a class checklist for speaking skills:

	Topic Is Clear	Ideas Are Organized Logically	Varies Pace Of Speaking And Tone Of Voice	Strong Opening	Connects With Audience
Student A					
Student B					
Student C					
Etc.					

Individual checklists can also be used to gather data about student learning. Students and/or teachers complete the checklists. A checklist for writing provides students and teachers with assessment information. Students use the checklist to analyze their piece of writing and determine if they need to make any changes before handing in a copy to you. You use the checklist to identify areas that the student needs more instruction or practice. A sample writing checklist may look as follows:

Name: _____		
	Student	Teacher
Contains Complete Thoughts		
Well Organized		
Spelling Is Correct		
Uses Correct Punctuation		
Etc.		

In the above example, students check off each area they completed in their writing. They attach the checklist to their writing when they hand it in to you. You use the checklist as you read and assess their written work. If there are discrepancies, provide feedback to the student by meeting with them individually and discussing ways to make their writing stronger or by providing written suggestions at the bottom of the checklist.

A number of different checklists are included on the Alaska Department of Education & Early Development website. Scroll down the Index to Assessment Strategies and Samples to view different examples of checklists.

4: Choral Response - If you need a quick assessment of student understanding, ask students to respond to a series of questions "as a class." If you listen carefully to the number and content of responses, you will get a good idea of whether or not the students are clear on what you are presenting. Choral response encourages all students to be actively engaged in the assessment process.

5: Cloze Procedure - The cloze procedure can be used to determine the level of student understanding regarding a particular topic or unit of study. Create or use a passage that relates to the unit. Make sure the passage is at a readability level for your students. Two or three passages at different readability levels may be needed to accommodate all the students in your class. Decide whether you are going to eliminate key vocabulary words or whether you will eliminate a set word, such as every 7th word. Your decision will be based on the age and readiness levels of the students in your class. Be sure to leave the first and last sentences intact to assist with student understanding. Two sites available online for creating cloze passages are Lexical Tutor and edHelper.
 Saskatchewan Public Schools has suggestions for using and adapting the cloze procedure to meet the needs of your students.

6: Concept Maps - Concept maps are a type of web that provides a visual representation of student understanding about a particular topic being studied. Google "concept maps graphic organizers" for a variety of printable concept maps that your students can use. Students print the topic or main idea in the oval in the center of the page. They then write supporting details in the spaces surrounding the center oval. Depending on the age and ability of the students, they can also group similar supporting details together. Using concept maps is a skill that must be taught to students. Once students are familiar with concept maps, they can be used as a formative assessment strategy in any subject area.
 Visit the All About Adolescent Literacy and the eHow websites for more information on concept maps and to download graphic organizers to use with your students.

7: Conferences - Student understanding can be formatively assessed using one-on-one conferences with each student in your class or with select students for whom you want to further assess their learning. Determine your target questions ahead of time to ensure you are gathering information related to your goal or outcome. Take notes during the conferences to refer to later when planning instruction.

8: Computer Surveys - Computer surveys are a quick way to determine what your students have learned about a topic of study. Create ten short response questions - true/false, multiple choice, or one word completion questions, and use a platform like SurveyMonkey to create the assessment. SurveyMonkey allows you to see individual responses as well as providing a summary of class responses.

9: Demonstration Stations - The use of demonstration stations is a great way for students to show what they know and help you determine the direction of future instruction. Midway through a unit on magnets, set up a number of stations and have students demonstrate how magnets attract and repel, where the magnetic field is the strongest, the parts of a magnet, how magnets are attracted to some objects and not others, how a compass works, etc. At each station, the students could also explain their thought processes to you or write their thoughts in a science journal.

10: Discussions - Having a class discussion part way through a unit of study can provide you with valuable information regarding what your students know about the subject. Focus the discussions on higher level thinking skills and give students a few minutes to reflect on their learning before beginning the discussion. Encourage students to share what they have learned and how that knowledge may have an impact on their daily lives. Brainstorm ways that the knowledge could be transferred to other subject areas or situations the students may come across.

Listening carefully to the responses given by students will provide useful information for planning future instruction.

11: Double Entry Journals - Journals are a great way to formatively assess students and get a "window" into their thinking. Double entry journals are one form of journaling. A double entry journal has two columns. In the left column, students write key words, ideas, or quotations. They then give their personal response to these words in the right column. Students may include questions that arise out of their responding. By reading the students' responses, you can assess students' knowledge and understanding of the topic you are studying. For example, when studying flight provide students with the phrases "lift vs. gravity," "Wright brothers," and "laws of flight." Students print these phrases in the left hand column of their journal and then respond to them in the right hand column. Reading over the student responses will provide you with information about student understanding. More information on double entry journals is found at Helpful ESL Links.
A template for a double entry journal is available at TeacherVision.

12: Drawings - Some of your students may be able to show you what they know by creating a drawing or a series of drawings to demonstrate their understanding. Encourage students to share their thinking about what they are drawing to gain insight into what they have learned up to a given point in a unit of study.
An article titled, "Annotated Student Drawings" describes one way to use student drawings to formatively assess student understanding.

13: Email Questions - Technology is a great resource for teachers and a medium that most students are familiar with and comfortable using. If your school provides all its students with email addresses, send questions to your students. The questions should focus on higher level thinking skills and demonstrate their learning during a current unit of study. Encourage students to think about all the learning opportunities they have participated in and how those activities fit in with their own background knowledge and experiences.

14:Examples/Non-Examples - Encourage your students to provide you with examples and nonexamples of a topic being studied. The examples and non-examples provide you with information regarding the depth of understanding of your students. For example, during a unit on recycling, ask your students to provide you with examples of recycling and examples that do not involve recycling. While studying a unit on mixtures and solutions in science, review mixtures and determine student understanding by asking students to provide you with examples and nonexamples of mixtures. Ask students to explain their reasoning for classifying each example and non-example.

15: Exit Cards - Exit cards could be used on a regular basis to formatively assess what your students know, understand, and have learned during a current unit of study. Before students leave at the end of class, ask them a question or pose a problem for them to solve. Give students a problem involving interest to solve during a unit in math or ask students to draw and label the planets when studying the solar system in science class. Ask students why people leave their homeland in social studies and how they would feel if they had to relocate with their family to another country. Students record their responses on a scrap piece of paper, a file card, or a sticky note. Collect the exit cards as the students leave the classroom. Glance through the exit cards to determine if students are generally understanding the topic or whether you need to provide further whole class or small group instruction in a particular area. Separate the exit cards into piles, indicating students who have mastered the outcome or are well on their way to doing so, students who are making steady progress, and students who need additional one-on-one or small group instruction. Exit cards can be used to create groupings for the next day's lesson and activities can be planned based on the students' responses.

Visit Educational Aspirations for more information on using exit cards for formative assessment.

16: Fist of Five - When you need a quick, immediate assessment, the fist of five is a great strategy. Ask your students a question and have them respond by showing you their level of understanding. Students hold up one finger if they are still unsure of a topic and need to be provided with more information. If they are on their way to fully understanding, they might hold up three or four fingers. Students who have mastered the unit and are able to demonstrate their knowledge and understanding would hold up five fingers. A glance around the classroom provides you with information about student learning and allows you to adapt your instruction accordingly.

Check out Cheryl's Classroom Tips to find out how one teacher uses the fist of five with her students.

17: Four Corners - A great way to get students out of their desks and moving is the four corners strategy. Some students learn better when they are moving so this strategy appeals to their learning preference. In each corner of the room, provide a label. Label one corner, "Strongly Agree," one corner, "Agree," the third corner, "Disagree," and the final corner, "Strongly Disagree." Call out a fact or statement about the current unit of study. Students go and stand in the corner that matches their response. Encourage students to share their reasons for choosing the response. Have one or two students from each corner share their answers with the rest of the class. By listening to the students as they discuss their reasons and share them with the class, you are provided with information that can guide future lessons.

The West Virginia Department of Education website provides more information about the four corners strategy and links to other useful websites.

18: Graffiti Wall - The graffiti wall is fun activity for students and gives you a visual representation of what your students have learned during a unit of study. Cover a part of a wall with white paper. Encourage students to write or draw what they have learned about a topic. Students can jot down facts, write personal opinions, connect their learning to other areas of study, etc. Using the graffiti wall activity partway through a unit provides you with

information for further planning of instruction. If there appear to be gaps in your students' learning, you can target those areas and further assess to see if there is indeed a deficit that you need to focus on in future lessons. Students may have made connections that you were not expecting or hadn't even thought of when planning the unit. The information you collect from the graffiti wall is valuable formative assessment data. Leave the graffiti wall up during the remainder of the unit and students can continue to add comments and drawings. For more information about using a graffiti wall as an assessment strategy please visit Whitley County Consolidated Schools and Grand Island Public Schools.

19: Graphic Organizers - Graphic organizers have many uses in a differentiated classroom. Using graphic organizers to formatively assess students is one use. Graphic organizers provide a visual representation of student learning. Students complete the template with their thoughts and understandings about a unit of study. A search on Google will provide you with many examples and templates to use. If you want to assess your students on sequencing, Google "sequencing graphic organizers." For graphic organizers related to science, Google "science graphic organizers." There are a multitude of graphic organizers for every grade level available online. Two websites that you may want to check out are Education Oasis and Education Place.

20: Individual Whiteboards - Individual whiteboards provide you with a quick assessment of student learning. Ask students questions about a topic or unit of study. Students record their answers on individual whiteboards. Circulate throughout the class and observe students responding. Students can also be asked to hold up their whiteboards. A glance at the whiteboards will provide you with information regarding student knowledge and understanding. Students can also be asked to draw and label their diagrams. In a unit on plants, ask students to draw and label the parts of the plant or the photosynthesis cycle. In a biology class, ask students to draw and label the heart and the route blood takes as it passes through the heart.

21: Inside-Outside Circle - The inside-outside circle is a strategy that can provide you with information about student learning. Divide your students into two groups. One group is the inside circle and the other group forms the outside circle. Students pair up with other students in the opposing circle and face one another. The inside circle begins by responding to a question or statement provided by the teacher. After a set amount of time--perhaps a minute or two, students reverse roles and the outside partners respond. While students are responding, circulate around the circles and listen to comments and explanations being shared. This information will help guide further planning.
The West Virginia Department of Education website provides further information on the inside-outside circle strategy and its use as a formative assessment strategy.

22: Learning Logs - Learning logs are notes students make during a unit of study. Time is set aside at the beginning or end of class for students to write about what they have learned, list any questions about the topic they may have, or make connections between the topic and their own lives. Learning logs provide you with valuable information about what students are learning and possible directions for future instruction. Using learning logs as a formative assessment strategy provides you with information about student learning and what information or skills students may still need to reach the goals and outcomes of the

unit. More information on learning logs is available at the [Saskatoon Public Schools website](#).

23: List 10 Things - About midway through a unit of study, instruct students to list ten things they have learned during the unit. Gather these lists and read through them to get an idea of where students are in regard to understanding. Look for gaps in learning or misunderstandings. These gaps and misunderstandings can be addressed in future lessons.

24: Matching Activities - A fun way to assess student knowledge of vocabulary or facts is to match words with their definitions or group facts into given categories. Provide each student or pair of students with a set of cards. If assessing knowledge of content area vocabulary in a health unit on nutrition, print words such as "carbohydrate," "protein," and "calorie" on one set of cards and their corresponding definitions on another set of cards. Be sure that there is only one word or one definition on each card. Students can also play a game of concentration with these cards. All cards are turned over so that the words and definitions are hidden. Students play this game with a partner. One student turns over two cards. If the two cards contain a word and a definition that match, they keep the pair of cards. Cards that do not match are turned back over and the other student takes a turn at finding a match. The activity continues until all words and definitions have been found.
Another way to use the matching activity is to put individual words onto each card and then have the students group the cards. When studying renewable and non-renewable resources, you would print words like "oil," "oxygen," "water," "coal," and "uranium" on the cards. Give each student or pair of students a set of cards. Students divide the cards into two piles. One pile would include renewable resources and the other pile would include non-renewable resources.

25: Observations - Observing students can provide valuable information about how students are progressing and what strategies they are using to learn. Recording information can take several different forms. You can use sticky notes to jot down your observations. At the end of the day, these sticky notes can be easily filed into individual student file folders or binders. Using a grid that contains all the names of the students in your class is another useful collection device. As you observe different students, you jot down information in their box on the grid. The grid allows you to see, at a glance, the names of the students who have not been observed. These students can then become the focus of your observation during the next class. File cards are another collection device. Notes about individual students can be collected on file cards. At the end of class, file these cards behind each student's name. When you are ready to analyze your observations, simply pull out all the file cards on a particular student and read the comments you have made during your observations. If observations are taken over a number of classes, you can determine whether there is a pattern to the behaviours you observe.

26: One Minute Essays - The one minute essay is a quick formative assessment strategy that allows you to gauge student understanding of a particular topic. Pose a question to the students have the students respond. Tell the students they have one minute to write down their response. Ensure the question you ask can be answered in one minute. Use questions that cause students to reflect on learning and make personal connections with their own lives. Use Bloom's Taxonomy of question starters if you are unsure of how to pose a question. Aim for questions that use the three higher levels.

27: One Minute Fluency - Being able to read fluently is an important skill. Assess the fluency of your students on a regular basis to ensure they are reading at an appropriate rate for understanding at their grade level.
For more information on reading fluency and a list of reading rates per grade level for both oral and silent reading, please visit Reading Horizons.
For reading passages at your grade level visit the Meade School District for Grade 2 to Grade 12 passages and The McGraw-Hills Company website for Grade 1 to Grade 6 fluency passages.

28: One Sentence Summaries - Asking students to provide you with a one sentence summary of what they have learned provides you with information about what your students know about a topic. Give students time to reflect on their learning and encourage students to think about their response. The depth of the student summaries will indicate their understanding of the topic or unit to date and provide you with direction for future planning of lessons.

29: Open-Ended Questions - Using open-ended questions allows you to determine the depth and breadth of student learning. Ask students questions that cannot be answered with "yes" or "no" or another one word answer. Open-ended questions require students to think about their answers and use their knowledge and understanding about a topic in their responses. Questions that involve the word "why" often encourage deeper thinking. Examples of using open-ended questions in math are available at Open Ended Questions in Math.
A good article titled, "Open-Ended Questions in Reading" is on the Practical Assessment, Research & Evaluation website.

30: Paper Pass - Paper pass is a form of brainstorming that gets students up and moving from their desks. Chart paper with different target words or questions are posted around the classroom. Students rotate around the room to the different brainstorming sheets and add their comments about the topics and about what other students have written. The process for the paper pass can be informal or formal. An informal use of the paper pass permits students to wander around the classroom and respond to the topic words or questions of their choosing. A more formal use involves students being divided into groups and systematically rotating around the room and responding. A wiki that outlines the specific steps for using the paper pass technique can be found at Differentiated Instruction.

31: Peer-Assessments - Assessments by peers is a powerful way to gather information about students and their understanding. Students can use a set criteria to assess the work of their classmates. Peer-assessment can be used in different subject areas. In writing, for example, students can assess another student's piece of writing and provide feedback about what they observe. An example of peer assessment in writing is found at the [Portfolio Assessment in the](#) [Foreign Language Classroom](#).
Whenever students work in groups, the conditions exist for students to assess their peers. An example of peer-assessment for group work is available at [Now with Bill Moyers](#).

32: Placemats - The placemat strategy is an enjoyable activity for students and provides you with information about their current level of understanding. Provide each group of four or five students with a large sheet of paper. In the middle of the paper write the topic or target question. Students divide the paper up so they each have a section to write in and there is room in the middle to summarize their responses. Students individually write or draw to demonstrate their understanding of the topic or target question in their area of the placemat. They then share what they have written or drawn with the other group members. After everyone has finished sharing, students discuss the information and come up with two or three main ideas. They write these ideas in the center of the paper and share them with the rest of the class. An analysis of the placemats provides you with a glimpse of what the students have learned so far in the unit.

33: Problem Solving - Pose a problem to students and ask them how they would solve it. Students can respond orally or in writing. The responses given by the students indicate their level of understanding regarding the unit being studied. Information provided by the students gives you an indication of what type of instruction is needed during future lessons. An article that explains more about the use of problem solving as a formative assessment strategy appears on the [Teaching Math](#) website.

34: Questionnaires - Questionnaires can be used in various subject areas and for a variety of purposes. When used as a formative assessment strategy, questionnaires provide teachers with information on student learning that they can use to plan further instruction.

35: Questioning - Questioning is a great formative assessment strategy to determine the depth of student understanding. Ask students lower level questions that focus on the facts and general information about a topic. Use higher level questions to encourage students to think about and reflect on their learning. During a unit on energy conservation, you may ask students to tell you different ways that they could conserve energy. The listing of ideas would be a lower level question. Asking students to describe one way they conserve energy and how this practice affects the environment would be a higher level question. Bloom's Taxonomy contains six levels of thinking that teachers can use to guide the questions they ask their students. Question starters for the different levels of Bloom's Taxonomy can be found at [Uteach](#). Read, "[Inviting Student](#) [Engagement with Questioning](#)" at redOrbit.

36: Quick Writes - Quick writes give teachers a visual of student learning. Provide students with an open-ended question and set an amount of time for having them write-- from two to five minutes. Tell students not to worry about the conventions of writing but rather focus on getting their ideas down on paper. When the time is up, ask students to put their pencils down. Look through the quick writes for valuable information regarding the knowledge and understanding your students have about a given topic. Using a quick write at the start of class is also a great way to activate the prior knowledge of your students.
A good article on the use of quick writes as a formative assessment tool is at the
MaryGrove College website.

37: Reflection Journals - Reflection journals are a type of journal that encourages students to think about what they have learned and make connections to their own lives. Reading through the entries that students create gives you information that can be used to plan future lessons. Visit TeacherVision for examples of reflection journals.

38: Repeat Pre-assessments - Another way to formatively assess your students is to repeat a pre-assessment strategy you used at the beginning of a unit of study. At the start of a unit on ecosystems, you may have asked your students to create a web or write a one-minute essay on ecosystems. Midway through the unit, repeat the strategy you used to collect pre-assessment data. Read through the student responses and compare the depth of understanding to the initial assessment. Most pre-assessment strategies can be repeated to determine what students have learned and to inform your instruction.

39: Response Cards - There are so many uses for response cards in a classroom. Ask a question and students respond by holding up a card. The most common response cards are yes/no questions. Students are provided with two cards. One card has the word "Yes" written on it and one card has the word "No" on it. After calling out a question, students respond by holding up their answer. Glance around the room and quickly assess student understanding. There are many different types of response cards. Try using true/false response cards, math operations cards, or punctuation cards with your students.
Deb's Data Digest gives an example of using math facts response cards and has a link to using punctuation response cards.

40: Self-Assessments - Provide each student with a self-assessment related to your unit of study. Self-assessment involves students reflecting about their own learning in relation to unit goals or outcomes. Checklists or open-ended questions can be used to assist students with their reflections. Include questions that deal with student understanding about the topic and with the identification of areas that need more information or more practice. Students are often able to articulate their learning needs to us. We just need to ask the right questions. Self-assessments is one way of asking students about their learning and the information can then be used to help plan future instruction.

41: Sentence Prompts - Sentence prompts can be used in a variety of ways to informally assess students and gather information to inform instruction. Simple sentence starters such as the following could be used:
• I understand ....
• I don't understand ....
• I need more information about ...

 Prompts for finding out what students have learned about different writing conventions are included in the article, "Formative assessments: Informal writing beats grammar quizzes" which is available at the You Can Teach Writing website.
 Prompts that can be used in math are available at Mister Teacher. The wording of these prompts can be adapted to target the unit outcome or specific skill you want to formatively assess.

42: Show of Hands - A simple strategy to gauge the understanding level of your students is through a show of hands. In a unit on problem solving, you may ask your students if they recall the steps needed to solve a problem or how to determine the operation of a problem. Through a quick show of hands you can decide whether you need to review with a few students or with the whole class.

43: Student Composed Questions - Have students write "test" questions. Students compose the questions and possible answers. Students should think about what questions would show an indepth understanding of a topic. When students have finished creating their questions and answers, they hand them in to you. Read through the questions and answers to get a feel for what the students have learned about a topic. Use the questions as prompts for class discussions or have students exchange their question sheets. Students answer the questions and return them to their owners to be "marked." Students enjoy playing the role of the teacher. Encourage students to provide positive, descriptive feedback to the student who answered their questions.

44: Teach a Friend - A good strategy for determining if students understand a concept or process is to have them teach it to a friend. Students need to think about the knowledge and skills needed for understanding and include that information in their teaching. Pair students up and have them "teach" their partner about the concept or process.

45: Think-Pair-Share - The think-pair-share strategy is a great way to gather information about the level of understanding of your students. It is a quick and easy strategy that can be used a number of times throughout a unit of study. Ask students questions such as, "What did you learn during today's lesson?" or "What connections can you make to your own life based on what you have learned so far?" Give students a few minutes to think about these questions. Pair students up with partners. Students share their thoughts with each other and then join a larger group or the whole class. Randomly call on students to share their ideas. By going through this process, students are able to solidify and refine their thinking before having to share their answers. Circulate throughout the class as students are sharing their thoughts and ideas to assess the overall depth of understanding.

A good article that looks at the think-pair-share as a formative assessment strategy is, "Teaching Ideas: Using Think-Pair-Share as a Formative Assessment in the Classroom" by Vivian Herron.

46: Three Facts and a Fib - The three facts and a fib activity is a great strategy to find out what students have learned about a unit of study. Students write down three facts and one fib about a topic. They take turn sharing their three facts and a fib with a partner, in a small group, or with the entire class. Students enjoy trying to identify the "fib." Circulate throughout the class as the students are writing and sharing what they have written.

47: Three Minute Pause - The three minute pause is a strategy that allows students to stop and reflect on learning, make connections to personal experiences, and ask for further information or clarification. Assign students to groups. Give students three minutes to complete this activity. First, the students summarize the main points of the new learning. Next, they make connections to personal experiences. Finally, they ask questions to further their understanding of the learning.
Visit the Literacy Geeks website for more information about the three minute pause. For other uses and variations of the three minute pause, read the article by Doug Buehl.

48: Three Things - The three things strategy involves giving each student a piece of paper and having them visually represent, through words or drawings, three things they have learned in the unit so far. Tell students to provide as many details as possible to determine the depth of their understanding. Have students share with a partner. By talking through their ideas, students may come up with more details to add. Give students a couple minutes to add or make changes to their "three things" and then have them hand them in so you can take a closer look at what they created. Circulate through the classroom as students are working and listen to what they are saying to their partners. Use this information to help plan future instruction.

49: 3-2-1 - The 3-2-1 strategy is a quick way to gain information about all the students in your class and the level of understanding they have about a current unit of study. Ask students to jot down three things they have learned about a topic, make two personal connections to the topic, and one area that is unclear or one question they have about the topic.
Reading Quest provides a few suggestions for using the 3-2-1 strategy and a template you can print out for classroom use.
Stem Resources also provides a description of the 3-2-1 strategy.

50: Thumbs Up, Thumbs Down - Using the thumbs up/thumbs down strategy with your students is one way to determine whether students understand the information presented. After introducing students to new learning, do a quick comprehension check to see if students understand the information presented. Ask students to give you a thumbs up if they understand and a thumbs down if they don't understand and need more information.
An article titled, "Formative Assessment: Thumbs Up, Thumbs Down, Thumbs All-Around" is available on the Teaching Through the Arts Blog. In this article, the author, Jeffrey Billard, discusses how students can use their thumbs to show different degrees of understanding.

51: Traffic Light - Provide students with three circles. Give students a red circle, a yellow circle, and a green circle. To check for student understanding during a lesson or unit, ask students questions about their learning. If students are comfortable with the topic and ready to move on, they hold up their green circle. If they are fairly comfortable with the topic, they hold up their yellow circles. Students who are confused or require further instruction to understand, hold up the red circle. This is a quick strategy that provides you with immediate feedback and provides direction for your instruction.
Innovate My School has an interesting article that suggests an alternative to the three circles. The article, "Traffic light cups to enhance assessment for learning - ten top tips" describes how students can use coloured cups to indicate their level of understanding.

52: Turn and Talk - The turn and talk strategy allows all students to talk about a question or topic that you have introduced in class. Students turn to a neighbour and discuss their thoughts and what they have learned about the question or topic. Both students are given the opportunity to speak. Circulate throughout the classroom during the turn and talk activity in order to get an idea of what they students know and have learned about the question or topic being studied. The Mid-Pacific Institute blog post titled, "Turn and Talk Strategy Gives Children A Voice" provides detailed information about the turn and talk strategy.

53: Whip Around - Whip around is a formative assessment strategy that involves all the students in the class. First, you pose a question to the students. The students are given a few minutes to formulate their answers and make brief notes. You then repeat the question and "whip around" the room and have each student give one response from their notes. The whip around assessment strategy provides general information about student learning and can help you plan future instruction. More information about the whip around strategy is provided at the Daniell Middle School Website.

FORMATIVE ASSESSMENT STRATEGIES FOR STUDENT USE

54: Ask - Ask your students what they have learned during a unit. Have students identify what skills they need to practice or what information they require to help with their understanding of the topic. Students are often aware of the type of assistance they need. There are a number of ways to collect this information. Pose the question to the entire class and have them jot down their responses and hand them in. Meet with students one-on-one and have a conversation that focuses on the current unit of study and ask students what they need to help them continue to learn about the topic. Students can identify what they need to do to further their understanding and what you can do as a teacher.

55: Checklists - Checklists provide students with valuable information and indicate areas they need to focus their learning on. Provide checklists for tasks and assignments that are given to students so they have a means to assess whether they have completed all the steps in a task or included all the needed information in an assignment. If students are missing information, they can decide on what course of action they need to take to learn the information.

56: Journals - Journals provide useful information to both teachers and students. Encourage students to identify questions or needs they have about their learning and reflect on how they could take an active role in addressing these questions or needs. Respond to student questions with further suggestions and let students decide on the best course of action.

57: Process Exemplars - Process exemplars provide students with information about the thinking process that leads to understanding. Collect samples of student thinking by having students explain how they arrived at an answer. A good example of a process exemplar would be solving a two digit multiplication question in math. Students record each step in their thinking and provide descriptions of how they solved the question. By providing a number of different process exemplars for each question, students realize there is more than one way to solve a problem and they can try out different processes and find the one that works the best for them.

58: Product Exemplars: Provide exemplars for students to compare their work. When writing a narrative paragraph, for example, post a few examples of the type of paragraph you are wanting them to hand in. Students can compare their narrative paragraphs to the exemplars and determine what they need to change or add to their paragraph to demonstrate mastery of narrative writing at their grade level.

59: Self-Marking Quizzes - Create a number of quizzes that contain higher and lower level questions. Allow students to take these quizzes and use a key to mark the quizzes themselves. Students are able to determine their level of understanding regarding a particular topic or unit of study. They can also identify areas they need to spend more time learning by taking these selfmarking quizzes. It is important to stress to students that the purpose of these quizzes is to identify areas for further development and that the number of correct or incorrect responses is not important.

60: Writing Continuums - Writing continuums provide valuable information to students which they can use to make decisions about their learning. Provide students with a number of different samples of writing that are written at different developmental levels. Students compare their writing sample to the samples on the continuum to determine what level they are working at and what they need to do to move to the next level. By analyzing their writing, students are able to identify areas they need to develop and set goals to improve their writing. Collect writing samples from your students to create your writing continuum.

Other booklets available in the *Focus on Student Learning* series are:
Book One: 50 Pre-assessment Strategies
Book Three: Summative Assessment - 50 Ways To Gather Evidence of Student Learning

Visit www.regiereducationalresources.com for more information on these and other teaching resources.

Sign up for my monthly newsletter and receive the ebooklet, ***Outcomes: Unpack and Plan in Five Easy Steps!***

BAHAGIAN PENDIDIKAN MENENGAH MARA

Pembezaan
Differentiation

CURRICULUM DIFFERENTIATION

Bahagian Pendidikan Menengah MARA

■ Differentiation is the adjustment of the teaching process according to the learning needs of the students.

■ It can be aimed at:

- A whole class
- Groups within the class
- Individuals

Getting Started With Differentiation

"In the end, all learners need your energy, your heart and your mind. They have that in common because they are humans. How they need you however differs. Unless we understand and respond to those differences, we fail many learners."

Getting Started with DIFFERENTIATION

WHAT :

■ Teaching with student variance in mind

■ Starting where the kids are

■ Responsive teaching rather than one-size fits all

■ Proactively planning varied approaches

■ Honoring each student's needs and maximizing each student's learning

■ Reacting responsively to a learner's needs

■ Shaking up the classroom so students have multiple options for taking in information, making sense of ideas, and expressing what they learn

Getting Started

■ Examine your philosophy about individual needs

■ Start small

■ Grow slowly…but grow

■ Envision how an activity will look

■ Step back and reflect

Where Do I Begin? -Start small…but start!

- Getting to know your students:
- assessment, assessment, assessment…
- identifying interests
- learning profile strategies
- Preparing the learning environment
- Differentiating content
- Differentiating process
- Differentiating product

Curriculum Differentiation

What

- It is a process teachers use to enhance learning

How

- By making changes in the depth and breadth of student learning

Why

- To improve the match between the learner's arious teaching methods

When

- During class, using varied pedagogy/andragogy and involves pretesting

Teachers Can Differentiate Through:

Lessons

Content

Process

Product

Environment

The Maker Model, June Maker, (1982)
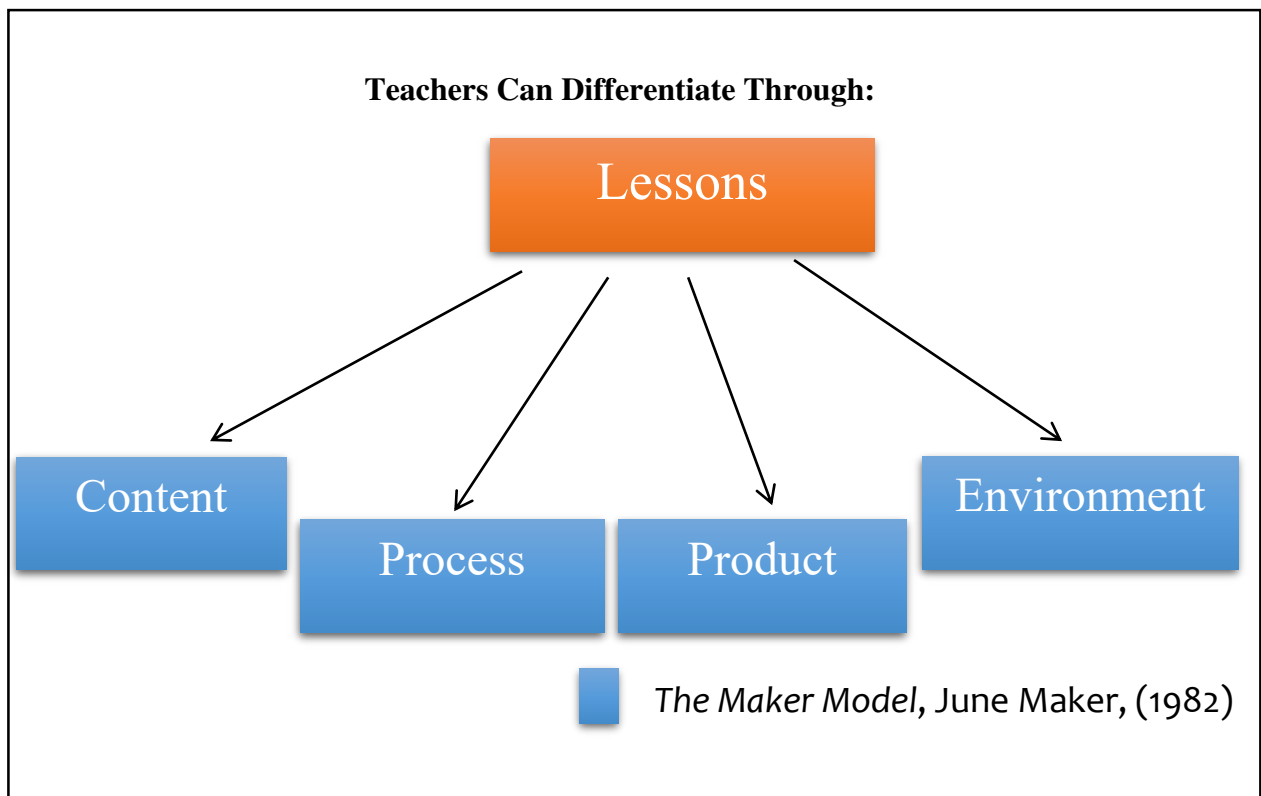
Content Is

- The 'KNOW'
- Content of curriculum comprises:
    - ✓ Ideas
    - ✓ Concepts
    - ✓ Information/knowledge presented to students
- Content can be made:
    - ✓ More complex
    - ✓ More varied
    - ✓ Organized differently

Differentiating Content

■ Important that high ability students have an understanding of the "basics"
■ Pretesting helps establish this
■ Need to be taught at a faster pace with less repetition and possibly from a different starting point.
■ Content goals should include outcomes adapted or changed to suit the established knowledge base of the students

✓ Does everyone need to know this?
✓ Should everyone know this?
✓ Could everyone do this?
✓ Consider benchmarks, grade level

Differentiating Content…

■ **Multiple texts**
■ **Varied computer programs**
■ **Varied time allotments**
■ **Interest centers**
■ **Contracts/CAP**
■ **Group Investigation**
■ **Compacting**

Process Is

- The 'DO'
- Process is the way in which content is presented to students:
  - ✓ Questions
  - ✓ Learning activities
- Process can be differentiated by:
  - ✓ Modifying the level of thinking (i.e., Bloom's)
  - ✓ Changing the pace
  - ✓ Changing the approach

Differentiating Process

- Processing skills help students manipulate knowledge/information in meaningful ways.
- Research has shown that gifted students benefit significantly from higher order thinking training.
- Careful preparation of questions is essential
- Adopt a thinking model e.g., deBono's Six Thinking Hats, and use it repeatedly to allow students to internalise it.

Differentiating Process

- Tiered assignments
- Learning centers
- Graphic organizers
- Small Group investigation
- RAFT (Role, Audience, Format, Topic)
- Learning Contracts
- Literature Circles
- RAFT (Role, Audience, Format, Topic)

- Multiple intelligences assignments
- Simulations
- Jigsaw
- Leveled Texts
- Independent Study
- deBono's Six Thinking Hats
- Learning Study
- etc

Instructional Styles

- **Independent Study**
- **CAP**
- **Mentorships**
- **Projects**
- **Simulation/role playing**
- **Electronic learning**
- **Learning games**
- **Learning centers**
- **Field trips**
- **Cooperative learning**
- **Peer tutoring**
- **Small grou discussions**
- **Demonstration**
- **Discussion**
- **Lecture**

high involvement

Students' Involvement

low involvement

Activity Type and Average Amount of Retention, Transfer and Application

Student Involvement

PASSIVE

Kind of Task

ABSTRACT

Lecture
5%
Reading
10%
Audio-Visual
20%
Demonstration
30%
Group Discussion
50%
Practice by Doing & Real World Application
75%
Teach Others/Quick Use of Learning
90%

ACTIVE

CONCRETE

Source: Sousa, David A., How the Brain Learns. Virginia: NASSP, 2005

Bahagian Pendidikan Menengah MARA   17

Tiered Lessons: What Is Tiering?

▪ One form of differentiation

▪ Ensures that students with different learning needs work with the same essentials and use the same key skills but at different levels of:

▪ Complexity

▪ Abstractness

▪ Open-endedness

What can be tiered?

- Assignments
- Homework
- Activities
- Experiments

- Materials
- Assessments
- Learning Centres
- etc

Product Is

- 'COMMUNICATION' of learning
- Product is:
  - ✓ What the students produce
  - ✓ NOT a summation of content
- Should involve:
  - ✓ Higher level reasoning skills (Bloom's Taxonomy)
    - ❖ Analysing
    - ❖ Evaluating
    - ❖ Creating

Differentiating Product

Gifted students require high but specific expectations and depth with product:

- Real world problems and products
- Variety of production requirements and alternatives
- Open-ended product alternatives that encourage creative responses
- A reason for sharing their findings
- A real audience
- Realistic corrective feedback

Differentiating Product

- Mobile
- Portfolio
- Essays
- Model
- Poem/Song
- Game

- Debate
- Multiple intelligences-based orientations
- Negotiated criteria
- Test Scores
- Book
- etc

Differentiating Learning Environment

- Changes to the physical environment
- Consistent use of pretesting
- Decrease in frequency of large group activities
- Increase in
1. Small group teaching activities
2. Flexible small group learning activities
3. Varied Homework
4. Learning Centers
5. Interest Centers
6. Independent projects (inside and outside classroom)

Types Of Groups...

- Within-class groups
- Between-class groups
- Enrichment groups
- Cooperative groups
- Interest-based groups
- Ability vs. mix ability grouping

Differentiating Teacher

- Teacher becoming part of the learning exploration
- Changes in organizing and managing classroom
- Changes in role from knowledge-giver to facilitator
- Must have appropriate base knowledge and skills
- Teacher becoming part of the learning exploration

How To Differentiate a Lesson

Consider adjusting these components:

- OBJECTIVE/LEARNING OUTCOMES (vary depth or breadth, open-ended tasks)
- INTRODUCTION (use graphic organizers, pretesting, add an intriguing twist...)
- GROUPING
- INSTRUCTION (vary teaching methods, use inductive, deductive or hands-on strategies; alter pace)
- LEARNING ACTIVITIES (concrete to abstract, visual to tactile, Bloom's)
- RESOURCES (vary the depth, complexity, format)
- PRODUCTS (assign or create options, alternatives or open-ended formats)

**Managing a Differentiated Classroom:
Some Practical Considerations**

- Giving thoughtful directions
- Establish routines for getting help
- Stay aware, stay organized
- Consider "home base" seats
- Establish start-up and wrap-up procedures
- Teach students to work for quality

Giving Directions

- If the whole class is doing the same activity, give the directions to the whole group
- Do not give multiple task directions to the whole class
- For small group work, taped directions can be use so students can listen to them repeatedly
- Use task cards to give directions to small groups
- Once directions were given, students cannot interrupt while teacher is with a group

INSTRUCTIONAL AND MANAGEMENT STRATEGIES
FOR DIFFERENTIATION

STRATEGY	DESCRIPTION OF STRATEGY	SUGGESTIONS FOR USE WITH GIFTED LEARNERS	WHY APPROPRIATE FOR GIFTED LEARNERS
COMPACTING	A 3-step process that : (i) assesses what a student knows about material to be studied and what the student still needs to master. (ii) plans for learning what is not known and excuses student from what is known, and (iii) plans for freed-up time to be spent in enriched or accelerated study.	* Explain the process and its benefits to students and parents * Document pre assessment *Allow student much choice in use of time "bought" through previous mastery *Use written plans and timelines for accelerated or enrichment study *Can use group compacting for several students	* Recognizes large reservoir of knowledge * Satisfies hunger to learn more about topics than school often allows * Encourages independence * Eliminates boredom and lethargy resulting from unnecessary drill and practice.
INDEPENDENT PROJECTS	Process through which student and teacher identify problems or topics or interest to the student. Both student and teacher plan a method of investigating the problem or topic and identifying the type of product the student will develop. This product should address the problem and demonstrate the student's ability to apply skills and knowledge to the problem or topic.	* Build on student interest * Allow the student maximum freedom to plan, based on student readiness for freedom. * Teacher provides guidance and structure to supplement student capacity to plan and to ensure high standards of production * Use preset timelines to zap procrastination *Use process logs to document the process involved throughout the study. * Established criteria for success	* Builds on student interest * Satisfies curiosity * Teaching planning and research skills at advanced levels * Encourages independence * Allows work with complex and abstract ideas * Allows long-term and in-depth work on topics of interest * Taps into high motivation

INTEREST CENTERS OR INTEREST GROUPS	Interest centers (often used with younger students) and interest groups (often used with older students) typically provide enrichment for students who can demonstrate mastery/competence with required work. They are sometimes a vehicle for providing students with meaningful study when basic assignments are completed.	* Make certain that the task is suitably in greater complex for a high-ability learner. * Allow students of like interests to work together * Involve the gifted learner in researching and creating interest centers and interest-group tasks * Allow some large blocks of time for working on the interest * Change centers less often, using more depth in fewer topics	* Allows opportunity for study in greater breadth and depth * Allows introduction of topics not in the regular curriculum * Can satisfy curiosity-explore *hows* and *ways* * Can allow student choice * Can draw on ability to make connections between fields and topics.
TIERED ASSIGNMENTS	In a heterogeneous class, a teacher uses varied levels of activities to ensure that students explore ideas at a level that builds on their prior knowledge and prompts continued growth. Student groups are varied approaches to exploration of essential ideas.	* Use advanced materials * Make certain the activity is complex *Ensure that students must transform ideas, not merely reproduce them *Make the activity open ended	* Allows early exploration and application of principles * Encourages broader reading than otherwise * Can focus on problem solving * Can provide meaningful work with peers of similar interest and readiness * Can develop creative talents

INSTRUCTIONAL AND MANAGEMENT STRATEGIES
FOR DIFFERENTIATION (CONTINUED)

STRATEGY	DESCRIPTION OF STRATEGY	SUGGESTIONS FOR USE WITH GIFTED LEARNERS	WHY APPROPRIATE FOR GIFTED LEARNERS
FLEXIBLE SKILLS GROUPING	Students are matched to skills work by virtue of readiness, not with the assumption that al need the same spelling task, computation drill, writing assignment, etc. Movement among groups is common, based on readiness on a given skill and growth in that skill	* Exempt gifted learners from basic skills work in areas where they demonstrate a high level of performance (100% is not required) *When skills work is needed, place it in a meaningful context as often as possible * Ensure that gifted learners develop advanced knowledge and skills in their areas talent	* Acknowledge quick mastery and recall of information * Can provide opportunity for development of advanced skills, including skills of production and expression * Can "buy" time for advanced work * Can allow a chance for independent work at the student's own pace
LEARNING CENTERS	Learning centers can be "stations" or collections of materials learners use to explore topics or practice skills. For gifted learners, learning centers should move beyond cursory exploration of topics and practice of basic skills, and should provide study in greater breadth and depth on interesting and important topics.	* Have some learning tasks that require transformation and application * Don't have all students do all tasks at all centers * Monitor what students do and learn at centers * Balance student and teacher choice about centers to be completed	* Can draw on advanced thinking skills * Can provide for continuous development of student skills * Can draw on advanced reading skills * Can allow for student independence * Can develop advanced skills with research and technology.

HIGH-LEVEL QUESTIONS	In class discussions and on tests, the teacher attempts to ensure that the highly able learner is presented with questions that draw on advanced level of information, require leaps of understanding, and challenge thinking	* All learners need to think at high levels * What makes a question high level for an advanced learner is its combination of advanced information with complex thinking requirements * Require students to defend answers * Use open-ended questions	* Can tap into talent as a thinker * Can develop metacognition (awareness of one's thinking) * Can move the student beyond easy facility with glib answers to developing logic and integrity in substantiating answers and opinions with reason and evidence.
MENTORSHIP/ APPRENTICE-SHIPS	The students works with a resource teacher, media specialist, parent volunteer, or community member to develop, carry out all or part of a project or task. This is also useful way to help students develop skills of production in a field and to develop careera awareness	* Match the mentor with the child's talent/interest area * Make sure agreements concerning roles are written down for mentor, students, teacher and parent * Be specific about the goals of the collaboration * Monitor the progress of the mentorship and help the students address snags if they occur	* Can allow the students to work on expert-level problems and tasks * Can draw on creativity * Can set problem solving in a relevant context * Can allow adult-level conversation * Can introduce the child to meaningful yardsticks of performance

INSTRUCTIONAL AND MANAGEMENT STRATEGIES
FOR DIFFERENTIATION (CONTINUED)

STRATEGY	DESCRIPTION OF STRATEGY	SUGGESTIONS FOR USE WITH GIFTED LEARNERS	WHY APPROPRIATE FOR GIFTED LEARNERS
CONTRACTS/ MANAGEMENT PLANS	Contracts take a number of forms that begin with an agreement between student and teacher. The teacher grants certain freedoms and choices about how a student will complete tasks, and the student agrees to use the freedoms appropriately in designing and completing work according to specifications	* If the student has a high level of basic skills in a subject, do not make skills work the centerpiece of the contract * When possible, focus the contract on concepts, themes, or problems and integrate the skills into the required projects or products * Establish clear and rigorous standards for success at the outset.	* Teaches a sense of accountability

MULTIPLE INTELLIGENCE

VERBAL LINGUISTIC	
LOGICAL – MATHEMATICS	
BODILY – KINESTHETIC	
MUSICAL – RHYTHM	
INTERPERSONAL	
INTRAPERSONAL	
VISUAL – SPATIAL	
NATURALIST	
SPIRITUAL	

DIFFERENTIATION PLANNING GUIDE

SUBJECT : …………………………

TOPIC : …………………………

SUBTOPIC : …………………………

OBJECTIVES	(DSKP/HSP/CS) KNOWLEDGE : SKILL
TYPES OF GROUPS	WITHIN CLASS ☐ BETWEEN CLASS ☐ ENRICHMENT GROUP ☐ COOPERATIVE ☐ INTEREST – BASED ☐
METHOD OF GROUP ASSIGNMENT	SELF – SELECTION ☐ TEACHER – SELECTION ☐
PRETEST TO USE	
IN WHAT WAY THE PROCESS OF LEARNING IN THIS UNIT BE DIFFERENTIATED	

BAHAGIAN PENDIDIKAN MENENGAH MARA

Elemen Merentas Kurikulum
Cross-curricular Elements

ELEMEN MERENTASI KURIKULUM

BIL	EMK	PENERANGAN
1.	Bahasa	Penggunaan bahasa pengantar yang betul perlu dititikberatkan dalam semua mata pelajaran.
		Semua PdP bagi setiap mata pelajaran, aspek sebutan, struktur ayat, tatabahasa, istilah dan laras bahasa perlu diberi penekanan bagi membantu murid menyusun idea dan berkomunikasi secara berkesan.
2.	Kelestarian Alam Sekitar	Kesedaran mencintai dan menyayangi alam sekitar dalam jiwa murid perlu dipupuk melalui PdP semua mata pelajaran.
		Pengetahuan dan kesedaran terhadap kepentingan alam sekitar dapat membentuk etika murid untuk menghargai alam sekitar.
3.	Nilai Murni	Nilai murni diberi penekanan dalam semua mata pelajaran supaya murid sedar akan kepentingan dan mengamalkannya.
		Nilai murni merangkumi aspek kerohanian, kemanusiaan dan kewarganegaraan yang menjadi amalan dalam kehidupan harian.
4.	Sains dan Teknologi	Menambahkan minat terhadap sains dan teknologi dapat meningkatkan literasi sains serta teknologi dalam kalangan murid.
		Penggunaan teknologi dalam pengajaran dapat membantu serta menyumbang kepada pembelajaran yang lebih cekap dan berkesan.
		Pengintegrasian sains dan teknologi dalam PdP merangkumi empat perkara iaitu : i)Pengetahuan sains dan teknologi (fakta, prinsip, konsep yang berkaitan dengan sains dan teknologi) ii)Kemahiran saintifik (proses pemikiran dan kemahiran manipulatif tertentu) iii)Sikap saintifik (seperti ketepatan, kejujuran, keselamatan) dan iv)Penggunaan teknologi dalam aktiviti PdP
5.	Patriotisme	Semangat patriotik dapat dipupuk melalui semua mata pelajaran, aktiviti kokurikulum dan khidmat masyarakat.
		Semangat patriotik dapat melahirkan murid yang mempunyai semangat cinta akan negara dan berbangga sebagai rakyat Malaysia.
6.	Kreativiti dan Inovasi	Kreativiti adalah kebolehan menggunakan imaginasi untuk mengumpul, mencerna dan menjana idea atau mencipta sesuatu yang baharu atau asli melalui ilham atau gabungan idea yang ada.

		Inovasi merupakan pengaplikasian kreativiti melalui ubah suaian, membaiki dan mempraktikkan idea.
		Kreativiti dan inovasi saling bergandingan dan perlu untuk memastikan pembangunan modal insan yang mampu menghadapi cabaran abad ke-21.
		Elemen kreativiti dan inovasi perlu diintegrasikan dala PdP.
7.	Keusahawanan	Penerapan elemen keusahawanan bertujuan membentuk ciri-ciri dan amalan keusahawanan sehingga menjadi satu budaya dalam kalangan pelajar.
		Ciri keusahawanan boleh diterapkan dalam PdP melalui aktiviti yang mampu memupuk sikap seperti rajin, jujur, amanah dan bertanggungjawab serta membangunkan minda kreatif dan inovatif untuk memacu idea ke pasaran.
8.	Teknologi Maklumat dan Komunikasi	Penerapan elemen Teknologi Maklumat dan Komunikasi (TMK) dalam PdP memastikan pelajar dapat mengaplikasikan dan mengukuhkan pengetahuan dan kemahiran asas TMK yang dipelajari.
		Pengaplikasian TMK bukan sahaja mendorong pelajar menjadi kreatif malah menjadikan PdP lebih menarik dan menyeronokkan serta meningkatkan kualiti pembelajaran.
		TMK diintegrasikan mengikut kesesuaian topik yang hendak diajar dan sebagai pengupaya bagi meningkatkan lagi kefahaman murid terhadap kandungan mata pelajaran.
9.	Kelestarian Global	Elemen Kelestarian Global bermatlamat melahirkan murid berdaya fikir lestari yang bersikap responsive terhadap persekitaran dalam kehidupan harian dengan mengaplikasi pengetahuan, kemahiran dan nilai yang diperoleh melalui elemen Penggunaan dan Pengeluaran Lestari, Kewarganegaraan Global dan Perpaduan.
		Elemen Kelestarian Global penting dalam menyediakan pelajar bagi menghadapi cabaran dan isu semasa di peringkat tempatan, negara dan global.
		Elemen ini diajar secara langsung dan secara sisipan dalam mata pelajaran yang berkaitan.

10.	Pendidikan Kewangan	Penerapan elemen Pendidikan Kewangan bertujuan membentuk generasi masa hadapan yang berkeupayaan membuat keputusan kewangan yang bijak, mengamalkan pengurusan kewangan yang beretika serta berkemahiran menguruskan hal ehwal kewangan secara bertanggungjawab.
		Elemen Pendidikan Kewangan boleh diterapkan dalam PdP secara langsung ataupun secara sisipan. Penerapan secara langsung adalah melalui tajuk-tajuk seperti Wang yang mengandungi elemen kewangan secara eksplisit seperti pengiraan faedah mudah dan faedah kompaun. Penerapan secara sisipan pula diintegrasikan melalui tajuk-tajuk lain merentas kurikulum. Pendedahan kepada pengurusan kewangan dalam kehidupan sebenar adalah penting bagi menyediakan murid dengan pengetahuan, kemahiran dan nilai yang dapat diaplikasikan secara berkesan dan bermakna.

ELEMENT ACROSS THE CURRICULUM (EMK)

NO	EMK	EXPLANATION
1.	Language	The accuracy of the language in instruction should be a priority in all subjects.
		During the teaching and learning of each subject, emphasis is given on the aspects of pronounciation, sentence structure, grammar and terminology of the language in order to assist pupils organize ideas as well as communicate effectively.
2.	Environmental Sustainability Awareness	Developing awareness towards the love of the environment in the students' lives needs to be nurtured through the teaching and learning in all subjects.
		Knowledge and awareness on the importance of the environment would help to shape students' ethics in appreciating nature.
3.	Noble Values	Noble values need to be emphasized in all subjects to ensure that students will be aware of the importance of these good principles and therefore will practice these elements in their lives.
		Noble values encompass the aspects of spiritually, humanity and citizenship will be the centre core of the students' daily life.
4.	Science and Technology	The increase of interest in the science and technology will help to improve scientific and technological literacy amongst students.
		The use of technology in teaching can help abd contribute to efficient and effective learning.
		The integration of science and technology in the teaching and learning process covers four areas, namely : i)The knowledge of science and technology (facts, principles, concepts related to science and technology) ii)Scientific skills (process of thought and scientific manipulative skills) iii)Scientific attitudes (such as accuracy, honesty, security) ; and the use of technology in classrooms iv)The use of technology in teaching and learning activities
5.	Patriotism	Patriotism can be nurtured through all subjects, extra-curricular activities and community services.
		Patriotism develops the spirit of love for the country as well as encourages the feelings of 'truly proud to be Malaysians' amongst students.

6.	Creativity and Innovation	Creativity is the ability to use imagination in gathering, extracting and generating ideas or creating new or original ideas or through combination ideas.
		Innovation is the application of creativity through the modification and practice of ideas.
		Creativity and innovation are always inter-connected. Therefore, there is a need to ensure that human capital development is able to meet challenges of the 21st Century.
		Elements of creativity and innovation should be integrated in the teaching and learning in the classroom.
7.	Enterpreneurship	The incorporation of entrepreneurship elements aims at developing specific attributes and entrepreneurial mind-set that will become a culture amongst students.
		Enterpreneurial attributes can be ingrained during lessons through fostering attitude such as diligence, honesty, trustworthiness and responsibility as well as developing creative and innovative mind-set to drive ideas into the market economy.
8.	Information and Communication Technology Skills (ICT)	Information and communication technology elements are incorporated in the lessons to ensure students are able to apply and strengthen their basic knowledge and skills in ICT.
		The application of ICT in the lesson does not only motivate students to be creative but stimulates interesting and fun teaching and learning as well as improve the quality of learning.
		ICT should be integrated in the lessons based on appropriate topics to be taught to futher enhance students' understanding of the content subject.
9.	Global Sustainability	The element of Global Sustainabality aims to produce students with sustainable thinking, responsive towards the surrounding environment in daily life by applying knowledge, skills and values through sustainable **Consumption and Production** element, global citizenship and unity.
		The element of Global Sustainability is crucial in preparing students to face challenges and current issues at local, national and global level.
		This element is taught directly or indirectly in related subjects.
10.	Financial Education	Incorporation of Financial Education element aims to produce future generations capable of making wise financial decisions, practice ethical financial

		management and skills in managing financial affairs in a responsible manner.
		Financial Education element can be incorporated directly or indirectly into T&L. Direct incorporation of this element is through topics such as calculations of simple interest and compound interest. Indirect infusion of this element can be integrated through other topics across the curriculum. Exposure to financial management in real life is important to prepare students with knowledge, skills and values which can be applied effectively and meaningfully.

BAHAGIAN PENDIDIKAN MENENGAH MARA

Nilai/SIKAP
Values

NILAI / SIKAP

NILAI DALAM SUBJEK BAHASA MELAYU

BIL		NILAI	
1.	Baik hati	10.	Kejujuran
2.	Berdikari	11.	Kerajinan
3.	Hemah tinggi	12.	Kerjasama
4.	Hormat-menghormati	13.	Kesederhanaan
5.	Kasih sayang	14.	Kesyukuran
6.	Keadilan	15.	Patriotisme
7.	Kebebasan	16.	Rasional
8.	Keberanian	17.	Semangat bermasyarakat
9.	Kebersihan fizikal dan mental		

NILAI DALAM SUBJEK BAHASA INGGERIS

NO.		VALUE	
1.	Kind	8.	Honesty
2.	Independent	9.	Diligent
3.	Polite	10.	Cooperation
4.	Respect	11.	Being Neighbourly
5.	Caring	12.	Grateful
6.	Fair	13.	Patriotic
7.	Courage	14.	Rational

SCIENTIFIC ATTITUDES AND NOBLE VALUES

NO	VALUES	EXPLANATION
1.	Interest and curiosity towards the environment	Inquiring from teachers, friends and others.
		Self reading.
		Collects materials or specimens for research.
		Do their own research.
2.	Honest and accurate in recording and validating data	Describe and record what have been observed.
		Data that recorded is not affected by emotion or imagination.
		Explain observations rationally.
		Make documentation of information resources used.
3.	Flexible and open-minded	Accept others opinion.
		Manage to change one stand based on convinced proof.
		Not prejudice.
4.	Diligent and persevere when carrying out a task	Do not give up.
		Ready to repeat the experiment.
		Determine during carry out a task.
		Ready to accept critics and challenges.
		Try to overcome problems and challenges.
5.	Systematic, confident and ethic	Carry out activity in a systematic and orderly and abide to suitable time.
		Arrange apparatus and materials in order.
		Confident with the task given.
		Dare to try.
		Dare to defend what is being done.
6.	Cooperative	Assist teachers and friends.
		Work together in carrying out activities and experiments.
		Selfless
		Fair and just.
7.	Being responsible about the safety of oneself, others and the environment	Personal safety partners.
		Preserve and conserve the environment.
8.	Virtuous	Love all life.
		Poise and respect.
9.	Appreciating the contribution of science and technology	Use science and technology invention with good manners.
		Use public facilities invented through science and technology responsibly.
10.	Appreciate God's gifts	Content with what is given by God.
		Use God's gifts wisely.
		Thankful to God.
11.	Appreciate and practice clean and healthy living	Care for your hygiene and health.
		Be sensitive to personal hygiene and environment.
12.	Realising that science is a means to understand nature	Stating how science is use to solve problems.
		Stating the implications of using science to solve a problem or issue.
		Communicate through correct scientific language.

NILAI DALAM PENDIDIKAN MATEMATIK

BIL	NILAI	MAKSUD
1.	Nilai Matematik	Penekanan kepada sifat-sifat dalam pengetahuan Matematik.
2.	Nilai sejagat	Kepercayaan kepada kekuasaan dan kebesaran tuhan.
		Unsur sejarah dan patriotism.

NILAI DALAM PENDIDIKAN MORAL

BIL	NILAI	MAKSUD
1.	Kepercayaan kepada tuhan	Keyakinan wujudnya Tuhan sebagai pencipta alam dan mematuhi segala ajaran berlandaskan pegangan agama atau kepercayaan masing-masing selaras dengan prinsip Rukun Negara.
2.	Baik Hati	Kepekaan terhadap keperluan dan kebajikan diri, dan orang lain dengan memberi bantuan serta sokongan moral secara ikhlas.
3.	Bertanggungjawab	Kesanggupan diri seseorang untuk memikul dan melaksanakan tugas serta kewajipan dengan sempurna.
4.	Berterima kasih	Perasaan dan perlakuan untuk menunjukkan pengiktirafan dan penghargaan.
5.	Hemah Tinggi	Beradab sopan dan berbudi pekerti mulia.
6.	Hormat	Menghargai dan memuliakan sreseorang serta menghormati peraturan institusi sosial.
7.	Kasih Sayang	Kepekaan dan perasaan cinta yang lahir daripada hati yang ikhlas.
8.	Keberanian	Kesanggupan untuk menghadapi cabaran dengan yakin dan tabah.
9.	Kejujuran	Bercakap benar, bersikap amanah dan ikhlas dalam setiap perlakuan.
10.	Kerajinan	Usaha yang berterusan, bersungguh-sungguh dan berdedikasi dalam melakukan sesuatu.
11.	Kerjasama	Melakukan sesuatu bersama-sama untuk kebaikan semua.
12.	Kesederhanaan	Bersikap tidak keterlaluan dalam membuat pertimbangan atau perlakuan tanpa mengabaikan kepentingan diri dan orang lain.
13.	Toleransi	Bertolak ansur, sabar dan mengawal diri demi kesejahteraan hidup diri dan orang lain.
14.	Berdikari	Kebolehan dan kesanggupan melakukan sesuatu tanpa bergantung kepada orang lain.
15.	Harga Diri	Berupaya menjaga maruah diri.
16.	Kebebasan	Bebas melakukan sesuatu tertakluk kepada peraturan dan undang-undang.
17.	Patriotisme	Bangga dan taat setia kepada raja dan negara.
18.	Rasional	Boleh berfikir berdasarkan alasan atau bukti yang nyata dan dapat mengambil tindakan yang wajar.

NILAI DALAM SUBJEK SEJARAH

BIL	NILAI	MAKSUD
1.	Mendukung Prinsip dan Nilai Demokrasi	Mentaati raja dan pemimpin negara.
		Mematuhi undang-undang dan peraturan.
		Menyanjung corak pemerintahan dan prinsip demokrasi.
		Mempertahan dan menjunjung perlembagaan negara.
2.	Mempunyai Keterikatan Emosi kepada Negara	Bertindak wajar.
		Bersifat amanah dan jujur.
		Berlaku adil dan bertimbang rasa.
		Berbangga dengan sejarah negara.
		Berbangga dengan tradisi dan budaya bangsa.
		Bersyukur sebagai warganegara Malaysia.
		Menghargai jasa dan perjuangan tokoh-tokoh negara.
3.	Mempunyai Perasaan Kekitaan	Hormat menghormati.
		Bertoleransi
		Bersatu padu dan berharmoni.
		Bersefahaman dan bermuafakat.
		Bekerjasama dan tolong menolong.
		Muhibah dan semangat bermasyarakat.
		Berganding bahu membangunkan negara.
		Kesedaran memelihara alam sekitar.
4.	Mengukuhkan Semangat Patriotik	Hormat lambang-lambang negara.
		Bertanggungjawab kepada bangsa dan negara.
		Berani mempertahan kedaulatan bangsa dan negara.
		Berkorban untuk negara.
5.	Mempunyai Jati Diri	Kepercayaan dan kepatuhan kepada Tuhan.
		Berilmu dan berketrampilan.
		Berakhlak dan berbudi pekerti mulia.
		Rajin dan gigih.
		Keterlibatan diri dalam pembangunan negara.
		Tabah menghadapi cabaran.
		Berdikari
		Menghargai masa.
		Kreatif dan inovatif.

NILAI DALAM SUBJEK GEOGRAFI

BIL	NILAI
1.	Amanah
2.	Bertanggungjawab
3.	Bersyukur
4.	Rasa bangga
5.	Patriotisme

NILAI DALAM SUBJEK PENDIDIKAN ISLAM, BAHASA ARAB, PENDIDIKAN SENI VISUAL, REKA BENTUK TEKNOLOGI

BIL	NILAI		
1.	Baik hati	10.	Kejujuran
2.	Berdikari	11.	Kerajinan
3.	Hemah tinggi	12.	Kerjasama
4.	Hormat-menghormati	13.	Kesederhanaan
5.	Kasih sayang	14.	Kesyukuran
6.	Keadilan	15.	Patriotisme
7.	Kebebasan	16.	Rasional
8.	Keberanian	17.	Semangat bermasyarakat
9.	Kebersihan fizikal dan mental		

NILAI, ETIKA DAN INTEGRITI DALAM SUBJEK ASAS SAINS KOMPUTER

BIL	ASPEK	HURAIAN
1.	Nilai	Jujur
		Amanah
		Bertanggungjawab
		Bekerjasama
		Cekap
		Bijaksana
2.	Etika	Melahirkan sikap akauntabiliti.
3.	Integriti	Berkeperibadian tinggi.
		Jati diri
4.	Gigih dalam melaksanakan tugasan.	
5.	Berkeupayaan untuk menangani masalah terbuka.	
6.	Bertoleransi dalam menerima kritikan.	
7.	Berkeupayaan untuk berkomunikasi dan bekerja dengan orang lain.	
8.	Menggunakan teknologi secara berhemah dan bertanggungjawab.	

NILAI DALAM SUBJEK PENDIDIKAN JASMANI & PENDIDIKAN KESIHATAN

BIL	NILAI	MAKSUD
1.	Baik Hati	Kepekaan terhadap keperluan dan kemampuan diri, dan orang lain dengan memberi sokongan moral secara ikhlas.
2.	Bertanggungjawab	Kesanggupan diri seseorang untuk memikul dan melaksanakan tugas serta kewajipan dengan sempurna.
3.	Berterima kasih	Perasaan dan perlakuan untuk menunjukkan pengiktirafan dan penghargaan.
4.	Hemah Tinggi	Beradab sopan dan berbudi pekerti mulia.
5.	Merendah diri	Tidak menunjuk-nunjuk
		Mengetahui taraf / kedudukan diri apabila berbicara dan bertindak.
6.	Hormat	Menghargai dan memuliakan sreseorang serta menghormati peraturan institusi sosial.
		Tidak menghina orang lain.
		Mendengar arahan ketua.
		Memahami hak dan keperluan orang lain.
7.	Keberanian	Kesanggupan untuk menghadapi cabaran dengan yakin dan tabah.
		Melakukan sesuatu di luar kemampuan.
8.	Kerajinan	Usaha yang berterusan, bersungguh-sungguh dan berdedikasi dalam melakukan sesuatu kemahhiran.
9.	Kerjasama	Melakukan sesuatu bersama-sama untuk kebaikan semua.
		Melakukan sesuatu dengan tujuan dan matlamatyang sama.
10.	Kesederhanaan	Bersikap tidak keterlaluan dalam membuat pertimbangan atau perlakuan tanpa mengabaikan kepentingan diri dan orang lain.
11.	Toleransi/bertolak ansur/ bertimbang rasa	Bertolak ansur, sabar dan mengawal diri demi kesejahteraan hidup diri dan orang lain.
		Tidak menyusahkan orang lain.
		Tidak mengambil kesempatan atas kesusahan orang lain.
12.	Berdikari	Kebolehan dan kesanggupan melakukan sesuatu tanpa bergantung kepada orang lain.
13.	Bercita-cita tinggi/berwawasan	Mempunyai azam untuk memajukan diri.
		Ada keinginan untuk berjaya.
14.	Peramah/mesra	Mudah berbicara dengan orang lain
		Tidak sombong.
15.	Tekun/bersungguh-sungguh	Melakukan sesuatu sehingga selesai/berjaya.
16.	Mengaja keselamatan diri/berhati-hati/berwaspada	Mengelakkan diri daripada ditimpa kemalangan / kecelakaan.
		Mematuhi peraturan.

17.	Pemaaf	Sedia menerima kesalahan orang lain.
		Tidak menghukum atas kesilapan yang tidak disengajakan.
18.	Yakin/teguh pendirian	Melakukan sesuatu tanpa was-was atau curiga.
		Nekad apabila bertindak.
19.	Tegas	Tidak berubah pendirian.
		Berani menghukum kesalahan.
20.	Prihatin	Berasa kasihan apabila melihat sesorang yang dalam kesusahan.
		Segera membantu apabila diperlukan.
21.	Menghargai	Menjaga alam sekitar agar tidak tercemar.
		Mengucapkan terima kasih apabila menerima sesuatu.
		Melakukan sesuatu untuk. Mengisi masa lapang.
		Mengucapkan terima kasih apabila menerima pertolongan.
		Tidak bermusuh dengan rakan/ memburuk-burukkan rakan/ berlaku baik dengan rakan.
		Membersihkan diri/ membersihkan kawasan persekitaran.
		Melakukan aktiviti kecergasan atau senaman/ Tidak menghisap rokok, dadah atau minumarak/ Mengamalkan pemakanan yang berkhasiat
22.	Rasional	Tahu kesan buruk dan baik apabila melakukan sesuatu.
23.	Berdisiplin	Patuh kepada peraturan.
		Mengikut jadual dan masa yang ditetapkan.
24.	Berbudi pekerti	Melakukan jasa atau kebaikan.
		Memberi sumbangan dan pertolongan.

BAHAGIAN PENDIDIKAN MENENGAH MARA

Strategi
Strategy

STRATEGI

BIL	STRATEGI	PENERANGAN
1.	Kontekstual/ Contextual	*Kaedah pembelajaran yang mengaitkan isi pelajaran dengan pengalaman harian individu, masyarakat dan persekitaran. *Pembelajaran berlaku apabila pelajar berupaya menghubungkaitkan pengetahuan baharu secara bermakna dan menghayati kerelevanan pembelajaran dalam kehidupan mereka. *Kaedah ini menyediakan pembelajaran secara konkrit yang melibatkan aktiviti *hands on* dan *minds-on*.
2.	Konstruktivisme/ Constructivisme	*Dapat melahirkan pelajar yang berkeupayaan untuk membina pemahaman dan pengetahuan baharu mereka sendiri berdasarkan pengalaman sedia ada. *Pelajar perlu menghubungkaitkan pengalamannya dengan maklumat baharu dalam proses pembelajarannya. *Pembelajaran ini menjadikan pelajar lebih kreatif, inovatif, faham, yakin dan seronok belajar sepanjang hayat. *Murid berpeluang bekerjasama, berkongsi idea dan pengalaman serta membuat refleksi.
3.	Inkuiri & Penemuan/Inquiry Discovery	*Merupakan pendekatan PdP yang berpusatkan pelajar secara menyeluruh dan aktif untuk memahami sesuatu konsep penyelesaian masalah yang berkesan dengan mengkaji masalah dari pelbagai sudut melalui teknik penyoalan, siasatan, perancangan, ramalan, analisa dapatan, merekod dapatan dan membuat rumusan. *Pelajar mencari dan menyelidiki sesuatu perkara atau peristiwa secara sistematik, kritis dan analitis sehingga dapat merumuskan jawapan kepada persoalan atau penemuannya sendiri dengan yakin. *Pelajar melibatkan diri secara aktif untuk mencari dan mengumpul maklumat melalui pelbagai aktiviti seperti memerhati, mendengar, menyoal, berbincang, membuat rujukan, ujikaji dan kaji siasat. *Boleh dijalankan secara berasingan atau digabungkan dalam pelbagai teknik pembelajaran seperti kerja projek, simulasi, lawatan, main peranan dan kuiz. *Guru berperanan sebagai fasilitator untuk membimbing proses penerokaan dan refleksi misalnya melalui aktiviti soal jawab. *Ciri-ciri pembelajaran inkuiri berfokus pada hipotesis yang hendak diuji, sikap keterbukaan

		penggunaan dan pengesahan fakta atau bukti dan rumusan.
4.	Belajar Cara Belajar/Learning To Learn	*Pelajar lebih peka kepada teknik pembelajaran yang berkesan. *Penguasaan kemahiran ini membolehkan pelajar meningkatkan pengetahuan, cekap bertindak untuk menghadapi dunia yang sering berubah dan berupaya mengamalkan pembelajaran seumur hidup.
5.	Pembelajaran Masteri/Mastery Learning	*Pendekatan pengajaran dan pembelajaran yang berfokus kepada penguasaan pelajar dalam sesuatu perkara yang dipelajari. *Pelbagai sumber maklumat dapat membantu pelajar untuk menguasai sesuatu perkara terlebih dahulu, contohnya dengan melayari internet melalui laman web yang terpilih akan dapat membantu pelajar menguasai pengetahuan dan kemahiran yang spesifik. *Pembelajaran dipecahkan kepada unit yang lebih kecil supaya mudah dikuasai. *Pelajar mesti menguasai 80 peratus tahap masteri sebelum beralih ke standard pembelajaran yang seterusnya.
6.	Kajian Masa Depan/Future Study	*Suatu pendekatan pengajaran untuk mendidik pelajar agar lebih prihatin terhadap sesuatu perkara atau isu yang berlaku pada masa lampau, masa kini dan masa depan. *Pelajar dapat membuat ramalan, menjangka akibat serta mengendalikan perubahan supaya mereka mendapat manfaat yang maksimum. *Adalah strategi secara saintifik yang dibina untuk menambahkan keupayaan murid dalam menghadapi pelbagai cabaran hidup dan membuat keputusan.
7.	Penilaian Kendiri/Self Assessment	*Satu program yang membolehkan pelajar belajar secara kendiri melalui penggunaan bahan pembelajaran. *Terdiri daripada 4 pendekatan iaitu Terarah Kendiri (Self-Directed), Kadar Kendiri (Self-Paced), Akses Kendiri (Self-Accessed) dan Pentaksiran Kendiri (Self-Assessed) *Pelajar mampu mengakses bahan-bahan pembelajaran seperti modul, laman sesawang, video interaktif dan dapat mentaksir pembelajaran sendiri. *Pelajar diberikan peluang memilih aktiviti, menilai hasil kerja dan memantau kemajuan sendiri agar

		mereka bertanggungjawab dan berdikari terhadap pembelajaran mereka.
8.	Kecerdasan Pelbagai/Multiple Intelligence	*Dapat mengembangkan potensi kecerdasan, minat dan kecenderungan murid kerana setiap individu mempunyai kecerdasan dan kebolehan yang berbeza. *Kecerdasan pelbagai merangkumi kecerdasan verbal-linguistik, logik-matematik, muzik, kinestetik, visual-ruang, interpersonal, intrapersonal dan naturalis.
9.	KBAT/HOTS	*Dinyatakan dalam kurikulum secara eksplisit supaya guru dapat menterjemahkannya dalam PdP bagi merangsang pemikiran berstruktur dan berfokus dalam kalangan pelajar. *Penerangan KBAT berfokus kepada 4 tahap pemikiran iaitu mengaplikasi, menganalisis, menilai dan mencipta. *Merangkumi kemahiran berfikir kritis dan kreatif, menaakul dan strategi berfikir.
10.	Penyelesaian Masalah	*Aktiviti PdP yang mencabar pemikiran pelajar untuk menyelesaikan masalah sama ada secara peribadi atau sosial. *Pelajar perlu menggunakan kemahiran, prinsip dan teori yang telah dipelajari untuk menyelesaikan masalah yang diberi melalui proses berikut: -Mengenal pasti dan menghuraikan sesuatu masalah -Menentukan pelbagai alternatif untuk menyelesaikan masalah dengan mengambil kira fakta, pandangan dan perasaan watak yang terlibat -Memilih strategi yang sesuai untuk menyelesaikan masalah seperti *Theory of Constraints* (TOC), peta minda, sebab dan akibat dan konflik resolusi. -Menguji keputusan tentatif yang dipilih dengan mengumpul dan menilai maklumat yang relevan dengan masalah. -Membuat keputusan muktamad atau mengubahsuaikan langkah atau strategi yang telah diambil. *Penyelesaian masalah secara kolaboratif perlu digalakkan dalam aktiviti bilik darjah.

11.	Pembelajaran Berasaskan Projek	*Kerja projek ditakrifkan sebagai tugasan, pembinaan atau siasatan yang teratur yang menjurus kepada matlamat yang spesifik. Aktiviti kerja projek dilaksanakan selepas pelajar menguasai kemahiran yang telah dipelajari.
		*Pengaplikasian dan penggabungjalinan pengetahuan, kemahiran dan nilai yang dipelajari daripada pelbagai disiplin ilmu untuk menyelesaikan masalah.
		*Pelajar menggunakan maklumat lama dan baharu untuk menghasilkan sesuatu yang nyata.
		*Kaedah ini melibatkan pelajar mengkaji sesuatu isu, menyiasat dan mempersembahkan dapatannya.
		*Pelajar diberi tugasan tertentu sama ada secara individu atau kumpulan dan mengikut tahap kebolehan mereka. Pelajar perlu medapatkan maklumat daripada pelbagai sumber untuk menyiapkan projek yang diberi oleh guru. Semasa proses menyiapkan tugasan, guru hendaklah sentiasa membimbing dan memberi konsultasi kepada pelajar.
		*Guru perlu memantau proses penyediaan projek secara berterusan.
		*Prosesnya melibatkan empat tahap iaitu mengumpul maklumat, memproses maklumat, melaporkan hasil projek dan refleksi kendiri.
		*Mempunyai jangka masa yang panjang, mengintegrasikan pelbagai disiplin ilmu, berpusatkan murid dan menghubungkaitkan pengamalan kehidupan sebenar.
		*Produk pembelajaran berasaskan kerja projek boleh dalam bentuk laporan, persembahan atau hasil kerja tangan.
		*Hasil kerja pelajar hendaklah dihantar secara individu dan guru perlu menyediakan rubrik bagi membolehkan elemen pengetahuan, kemahiran dan nilai ditaksir sepertimana yang telah dirancang.
		*Dapat membantu guru menilai perkembangan atau kualiti pembelajaran pelajar.
		*Pelajar lebih bermotivasi kerana dapat menghasilkan sesuatu produk.
12.	Pembelajaran Koperatif	*Kaedah PdP dalam kumpulan yang membolehkan pelajar belajar cara belajar dan membantu antara satu sama lain dalam menyelesaikan sesuatu tugasan.
		*Ahli kumpulan bekerja, berkongsi idea, bahan dan peralatan untuk mencapai matlamat sendiri dalam kumpulan

		*Dapat menghasilkan tugasan kumpulan, mewujudkan interaksi, semangat bekerja sepasukan dan latihan kepimpinan.
13.	Pembelajaran Luar Bilik Darjah	*Aktiviti kurikulum yang dilakukan di luar bilik darjah secara terancang dan berstruktur. *Dapat mengukuhkan pemahaman pelajar terhadap konsep yang dipelajari dalam kelas, memberikan pengalaman pembelajaran dalam situasi yang sebenar di samping mengembangkan kemahiran sosial dan insaniah.
14.	Pendekatan Modular	*Maksud : memecahkan kemahiran kepada unit-unit kecil yang dikenali sebagai modul. *Kemahiran bahasa distrukturkan menggunakan pendekatan modular untuk memastikan penguasaan kecekapan berbahasa yang baik. *Melalui pendekatan ini, kemahiran tertentu dapat dilaksanakan dengan lebih berfokus dan mudah dikuasai oleh pelajar.
15.	Simulasi	*Boleh dilakukan dengan cuba mewujudkan situasi sebenar bagi sesuatu topik. *Mesti dilakukan dalam keadaan terkawal melalui sosiodrama yang mengandungi skrip dan konflik, mahupun main peranan seperti lakonan spontan. *Aktiviti yang dijalankan menyerupai yang sebenarnya. Contoh simulasi yang utama ialah main peranan, permainan dan penggunaan model. *Dalam main peranan, murid melakonkan sesuatu peranan secara spontan berdasarkan beberapa syarat yang telah ditentukan. Permainan pula mempunyai peraturan yang harus dipatuhi. *Pelajar bermain untuk mempelajari sesuatu prinsip ataupun untuk memahami proses untuk membuat keputusan. *Model boleh digunakan untuk mewakili objek atau keadaan sebenar. *Murid dapat membayangkan situasi tersebut dan seterusnya memahami konsep dan prinsip yang dipelajari.

BAHAGIAN PENDIDIKAN MENENGAH MARA

Pembelajaran Abad Ke-21
21st Century Learning

PEMBELAJARAN ABAD KE-21

10 Ciri Pembelajaran Abad ke-21

- Pembelajaran aktif
- Penggunaan teknologi
- Berpusatkan pelajar
- Pelajar faham dan patuh arahan
- Persekitaran kondusif
- Pembelajaran kendiri
- Saling hormat menghormati
- Pelajar bertanggungjawab terhadap pelajaran mereka
- Penilaian berasaskan pencapaian
- Pembelajaran kolaboratif

Ciri-ciri Guru Abad ke-21

NO	CIRI-CIRI	PENERANGAN
1.	Mahir dan berketerampilan dalam pedagogi (PdP)	Guru haruslah mahir dalam menggunakan pelbagai kaedah dan strategi pengajaran dan pembelajaran yang betul semasa menjalankan PdP di dalam kelas. Pembelajaran yang pelbagai ini akan mewujudkan suasana pembelajaran yang lebih kondusif dan mesra pelajar.
2.	Menguasai subjek (kandungan kurikulum)	Guru haruslah menguasai kandungan kurikulum bagi subjek yang diajar.
3.	Menggunakan teknologi terkini	Pembelajaran menggunakan lcd, gajet, pelbagai alatan elektronik serta aplikasi mobile. Contoh teknologi dalam PdP ialah *blended learning*, *flipped classroom* dan *gamification*.
4.	Memiliki kemahiran kaunseling	Kemahiran untuk membantu pelajar menangani masalah emosi, sosial dan juga pelbagai isu yang berkaitan pembelajaran sama ada di dalam mahupun di luar bilik darjah.
5.	Memahami psikologi pembelajaran (*cognitive psychology*)	Untuk memahami minat dan respons pelajar ketika belajar.
6.	Memahami perkembangan pelajar dan menyayangi mereka	Menilai perkembangan pelajar; sesuai dengan kebolehan mereka.

AKTIVITI PEMBELAJARAN ABAD KE-21

NO	AKTIVITI	PENERANGAN
1.	Round Robin	Setiap kumpulan diberikan topik untuk dibincangkan. Perbincangan dicatat. Selepas 2 minit, kertas beredar ke kumpulan kedua. Kumpulan kedua berbincang dan mencatat respons yang berbeza.
2.	Role play (Main peranan)	Setiap kumpulan diberi tugasan. Setiap ahli kumpulan perlu memainkan peranan sebagai watak yang berlainan.
3.	Think Pair Share (Fikir-pasangan-kongsi)	1.Pelajar dikehendaki memikirkan topik/soalan yang diberi secara individu. 2.Pelajar diminta berbincang dengan rakan/pasangan. 3.Mereka perlu berkongsi maklumat/hasil perbincangan dengan pasangan lain/kumpulan/kelas.
4.	Gallery walk (Galeri Susur Minda / Galeri Jelajah Minda)	Pelajar berjalan/bergerak di sekeliling bilik/dewan untuk : a)melihat b)berfikir c)berbincang dengan rakan-rakan sekumpulan berkenaan hasil kerja rakan-rakan lain yang ditampal.
5.	Hot Seat (Kerusi Panas)	Seorang pelajar dipilih untuk tampil di hadapan kelas. Pelajar tersebut perlu memberikan pandangan atau menjawab soalan yang diajukan rakan-rakan berkaitan dengan tajuk yang dibincangkan.
6.	Three stray, one stay	Aktiviti bermula dengan perbincangan secara berkumpulan. Selesai aktiviti perbincangan dalam kumpulan, semua akan bergerak ke kumpulan lain untuk mendapatkan maklumat, kecuali seorang wakil dari setiap kumpulan yang akan kekal berada di tempat asal. Pelajar yang kekal akan menjadi pembentang kepada kumpulan pelawat.

7.	Peta i-Think (Peta Pemikiran)	Terdiri daripada 8 peta pemikiran dengan proses pemikiran dan bentuk yang berbeza. Konsepnya adalah dengan menggunakan peta pemikiran sebagai alat untuk menjana idea pelajar, juga untuk pelajar membuat kajian dan dipersembahkan dalam bentuk grafik. (Rujuk lampiran i). Peta i-Think terdiri daripada : • Peta Bulatan • Peta Buih • Peta Buih Berganda • Peta Pokok • Peta Dakap • Peta Alir • Peta Pelbagai Alir • Peta Titi
8.	Dramatisation (Drama)	Persembahan pelajar dalam bentuk drama, iaitu hasil kerja pelajar secara berkumpulan selepas membuat perbincangan, perancangan dan latihan.
9.	Envoys (Utusan)	Setiap kumpulan diberi tugasan dan seorang utusan dipilih dari setiap kumpulan untuk menerangkan hasil perbincangan tentang tajuk/isu kepada kumpulan baru di samping mendapatkan pandangan dari kumpulan baru tentang tajuk itu. Utusan kembali semula kepada kumpulan asal dengan dan memberi maklum balas kepada ahlinya.
10.	Exit Card (Kad Keluar)	Untuk refleksi. Contoh yang lain : 1. *Light Bulb* (Mentol) – 'Apakah satu perkara baharu yang saya pelajari hari ini?' 2. *Bin, Bring, Bag* – *Bin* (Bakul) : 'Apa yang saya perlu hapuskan/keluarkan?' *Bring* (Bawa) : 'Apakah yang saya boleh bawa untuk dikongsi bersama kumpulan saya?' *Bag* (Beg) : 'Apa yang saya suka/bangga?'

11.	Forum	Pelajar berada dalam kumpulan berempat dan diberikan tajuk perbincangan yang berbeza-beza. Setiap ahli akan mengemukakan pandangan dan pendapat.
12.	Jigsaw Reading (Susun Suai)	Pelajar diberi keratan ayat/perenggan yang mana mereka dikehendaki menyusun semula ayat-ayat/perenggan-perenggan mengikut kesesuaian /idea/jalan/cerita/kronologi dan lain-lain.
13.	Jot Thoughts (Catatan Fikiran)	Setiap pelajar diberi beberapa helai S*ticky notes*. Guru menyebut tajuk, memberi masa kepada pelajar untuk memikirkan jawapan serta menulis jawapan. Setiap *Sticky notes* dituliskan dengan idea yang berbeza-beza. *Sticky notes* ditampal di tengah-tengah meja (mozek).
14.	KWL Chart (Carta KWL)	Sebuah Carta diberi kepada pelajar sebelum PdP. Pelajar diminta mengisi ruang-ruang seperti : 1.*Know* (*What I know about*/Apa yang saya tahu) -pengetahuan sedia ada 2. *Want* (*What I want to know more about*/ Apa yang saya ingin tahu lebih lanjut?) -soalan-soalan pelajar 3. *Learned* (*What I have learned*/Apa yang saya telah pelajari) -penilaian berbentuk sumatif
15.	Listening Triad (Pendengaran bertiga)	3 orang pelajar dalam satu kumpulan. *Individu pertama sebagai penyoal *Individu kedua menjawab soalan *Individu ketiga sebagai pencatat. Pencatat akan membuat laporan selepas perbualan tersebut berakhir. Untuk PdP seterusnya, peranan seseorang itu akan bersilih ganti.
16.	Making Model (Membina model)	Membina model 2 Dimensi, 3 Dimensi atau model berfungsi.
17.	Presentations (Pembentangan)	Persembahan pelajar dalam pelbagai bentuk seperti : a) Lisan b) Video c) Powerpoint d) Pameran e) Nyanyian

		f) Tarian g) Lakonan Guru perlu membuat penilaian dan memberi maklumbalas.
18.	Rotating Stations (Stesen Berputar)	Kumpulan kecil diletakkan di setiap stesen. Mereka diberi masa 10 minit untuk menjawab topik yang telah ditentukan di setiap stesen. Apabila masa tamat, kumpulan itu akan bergerak ke stesen seterusnya sehinggalah semua kumpulan telah melalui semua stesen. Setiap kumpulan diberi pen warna yang berbeza untuk mencatat jawapan.
19.	Self Assessment (Penilaian Kendiri)	Pelajar menyemak sendiri tugasan yang diberikan berdasarkan panduan guru.
20.	Shout Out (Laungan)	Pelajar digalakkan memberi idea secara lisan dengan laungan yang kuat dalam sesi sumbang saran. Idea-idea mereka dicatat di atas kertas atau papan putih. Aktiviti seterusnya – susun semula idea-idea ini secara sistematik.
21.	Six Thinking Hats (6 Topi Pemikir)	Pelajar diminta menyatakan pandangan berdasarkan *Thinking Hats* yang telah ditentukan.
22.	Skits (Sketsa)	Sketsa memberi peluang kepada pelajar untuk membuktikan kefahaman mereka terhadap topik yang diberi.
23.	Traffic Lights (Lampu Isyarat)	Satu cara penilaian kendiri di awal, semasa atau di akhir PdP. Tiga warna digunakan : *Green (Hijau) – Saya yakin saya tahu *Yellow (Kuning) –Rasa-rasanya saya tahu *Red (Merah) – Saya tidak tahu
24.	Human Graphing (Graf Manusia)	Pelajar bergerak mengikut kumpulan dan membentuk corak/pattern tertentu supaya topik mudah difahami.
25.	Video Clips (Klip Video)	Penggunaan klip video dengan berpandukan soalan-soalan yang disediakan.
26.	Using Large Picture Cards (Gambar/Foto Besar)	Penggunaan gambar atau foto dalam PdP.
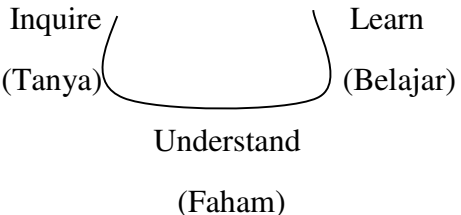
27.	I See, I Think, I Wonder (Saya lihat, saya fikir & saya bertanya)	Dengan menggunakan gambar/objek, pelajar diminta: (a) senaraikan/bincangkan apa yang mereka lihat (*see*), (b) fikirkan apa yang mereka lihat dan kaitkan dengan kehidupan seharian/lain-lain perkara (*think*) & (c) bertanya soalan-soalan yang berkaitan/relevan (*wonder*).
28.	Recap Groups (Mengulang/Mengingat Semula)	Kumpulan pelajar memberi laporan kepada kelas secara lisan berkenaan apa yang telah dipelajari sebelum itu.
29.	Y Chart (Carta Y)	Tiga keping kertas ditampal dalam bentuk 'Y' dan pada setiap kertas ditulis soalan yang berbeza untuk pelajar menulis jawapan mereka.
30.	Time Capsules (Kapsul Masa)	Guru mengambil hasil kerja/ pandangan setiap pelajar pada awal tahun (contohnya) dan membuka kapsul itu beberapa bulan kemudian untuk pelajar membaca semula apa yang mereka tulis.
31.	Chain Link (Rangkaian)	Pelajar membuat 'rantai kertas' yang mana pada setiap kertas ditulis idea/ maklumat yang berkaitan dengan topik yang diberi.
32.	Survey (Tinjauan)	Pelajar membuat tinjauan untuk mendapatkan maklumat yang lebih terperinci bagi tujuan membuat analisis berkenaan topik/isu.
33.	Learning Modalities (Gaya Pembelajaran)	Penggunaan gabungan pelbagai cara pembelajaran contohnya kinestetik (pergerakan), visual dan/atau auditori (mendengar).PdP melibatkan aktiviti-aktiviti mengikut kecenderungan pelajar (Multiple Intelligences) : 1. Verbal-Linguistic 2. Logical-Mathematical 3. Visual-Spatial 4. Bodily-Kinesthetic 5. Musical-Rhythmic 6. Naturalist 7. Intrapersonal 8. Interpersonal

34.	Quadrant Activity (Aktiviti Berempat)	1. Satu bulatan dilukis di tengah-tengah kertas yang besar. Di luar bulatan, guru membahagikan kertas kepada 4 bahagian (satu bahagian untuk satu pelajar). 2. Setiap pelajar menulis jawapan/pandangan kepada soalan yang diberi. 3. Pelajar berbincang dengan ahli kumpulan dan menulis jawapan yang telah dipersetujui semua ahli kumpulan di dalam bulatan.

35.	Indicator (Petunjuk)	Penggunaan dua warna untuk menunjukkan jawapan pelajar, contohnya:
		    (a) hijau – Ya / Setuju
		    (b) merah – Bukan / Tidak setuju

36.	Build The Biggest Tower (Membina Menara Yang Terbesar)	1. Pelajar bekerja secara berkumpulan & kolaboratif 2. Guru memberi bahan-bahan yang terhad kepada setiap pelajar untuk membina menara mereka secara kreatif 3. Menara ini mencerminkan/memaparkan refleksi/pandangan mereka.
37.	Chunking (Gabungan)	Menggunakan pengetahuan sedia ada pelajar yang digabungkan dengan pembelajaran baru untuk mempertingkatkan kefahaman mereka.
38.	Graphic Organiser (Pengurusan Grafik)	Bentuk grafik yang digunakan atau dicipta pelajar untuk menunjukkan kefahaman mereka dan/atau maklumat/fakta berkaitan isu/tajuk yang dibincang.
39.	Parachute Building (Membuat Payung Terjun)	Aktiviti inkuiri yang menggalakkan pelajar bekerjasama dan berkolaboratif.
40.	Café (Kafe/Kedai Kopi)	Seperti di kafe, pelajar duduk secara berkumpulan di sebuah meja dan berbincang tentang soalan/isu yang diletakkan di atas alas meja (*table cloth*).
41.	IB Tree (Pokok IB)	Setiap pelajar diberi helaian yang mempunyai pokok IB dan mereka mencatatkan perkembangan mereka secara individu tentang apa yang dipelajari.

42.	SWOT	Pelajar dikemukakan soalan/situasi/isu untuk dibincangkan dan mereka dikehendaki mengisi borang yang mempunyai empat petak:
		S: *Strengths* (Kekuatan) W: *Weaknesses* (Kelemahan) O: *Obstacles* (Halangan/Cabaran) T: *Thoughts* (Soalan-soalan untuk tindakan/kajian seterusnya).
43.	Commercial (Iklan)	Satu cara untuk menyampaikan maklumat tentang tajuk/topik yang diberi.
44.	Continuum (Penerusan)	Sama seperti graf atau carta, kaedah ini boleh digunakan untuk menunjukkan kefahaman dan perkembangan pelajar dalam sesuatu topik. I——————————————————I
45.	Checklist (Senarai semak)	Pelajar dikehendaki menanda item-item dalam senarai untuk menunjukkan kefahaman mereka.
46.	Anecdotal Notes (Nota Anekdot)	Guru membuat catatan ringkas berdasarkan pemerhatian dan perbincangan dengan pelajarnya. Nota-nota ringkas ini boleh dirujuk apabila membuat laporan secara formal.
47.	Bus Stop (Hentian Bas)	1. Soalan/topik di atas kertas ditampal pada dinding di beberapa tempat dalam kelas/dewan. 2. Pelajar bergerak secara berkumpulan dari satu hentian ke hentian yang lain sambil berbincang tentang soalan/topik berkenaan. 3. Pelajar berkongsi pendapat dan merekodkan komen dan maklumat yang diperolehi.
48.	Table Talkers (Perbincangan di Meja)	Kad-kad yang mengandungi topik/isu diletakkan di atas meja untuk perbincangan kumpulan secara lisan atau bertulis.
49.	Brainstorming (Sumbang saran)	Cara yang amat baik untuk mendapat idea-idea bernas daripada pelajar. Semua pelajar mengemukakan idea atau cadangan.
50.	Classification (Klasifikasi)	Menampal kata-kata kunci atau soalan di dinding di beberapa tempat. Pelajar dikehendaki berdiri di tempat yang terdapat kata-kata atau soalan yang mereka suka/setuju/faham.

51.	What Matters (Apa yang penting)	Satu teknik menjawab soalan-soalan yang diberi – pelajar bergerak dan melihat serta cuba memahami atau memilih jawapan-jawapan yang sesuai yang ditampal di sekitar mereka.
52.	Personal Learning Experiences (Pengalaman Peribadi)	Pelajar berkongsi pengalaman peribadi berkaitan isu/topik yang dibincang
53.	Diamond Ranking (Susunan Berlian)	9 keping kertas/kad disusun dalam bentuk berlian (1-2-3-2-1). Strategi ini digunakan untuk menentukan/menunjukkan susunan mengikut kepentingan idea/isu/isi, pada pandangan pelajar.
54.	Story Books (Buku Cerita)	Penggunaan buku-buku cerita untuk kanak-kanak dalam kelas pelajar yang lebih dewasa dapat memberi peluang kepada mereka untuk berbincang dan membuat refleksi.
55.	Party (Pesta)	Mewujudkan suasana 'berpesta' dan berbincang tentang topik/isu yang disediakan atas kad-kad yang ditampal di sekeliling bilik/dewan atau diletak di atas meja-meja atau di atas lantai.
56.	Games (Permainan)	Permainan dijadikan strategi yang berkesan untuk refleksi/perbincangan.
57.	Learning Trios A-B-C (Tiga Serangkai A-B-C)	Satu kaedah menguruskan perbincangan dalam kalangan pelajar: 1. Pelajar A bercakap, pelajar B & C dengar dan bertanya soalan. 2. Pelajar B bercakap, pelajar A & C dengar dan bertanya soalan. 3. Pelajar C bercakap, pelajar A & B dengar dan bertanya soalan. Pelajar juga boleh membuat catatan bertulis hasil daripada perbincangan mereka.
58.	Carousel (Karusel)	1. Soalan-soalan diletak/tampal di sekeliling bilik. 2. Pelajar dikehendaki bergerak dalam kumpulan dari satu soalan ke soalan yang lain, dengan menunggu arahan guru sebelum bergerak. 3. Semua pelajar mesti bergerak ke setiap tempat yang diletakkan soalan. Pelajar diminta berbincang atau menulis jawapan mereka atas kertas. 4. Cara yang lain – pelajar duduk dalam kumpulan dan soalan-soalan diedarkan mengikut pusingan jam.

		Setiap kumpulan mesti bincang & jawab semua soalan.
59.	Sharing (Berkongsi)	Kumpulan disusun mengikut minat atau hasil pembelajaran yang sama.
60.	Read and Highlight (Baca dan Tanda)	Satu strategi membaca yang berpandu. Pelajar diberi bahan bacaan dan dikehendaki mengenalpasti dan menanda kata-kata kunci atau ayat-ayat penting/utama.
61.	Question Builder (Pembina Soalan)	Guru memberi konsep dan bimbing pelajar supaya mereka membina soalan-soalan yang membolehkan mereka mempelajari lebih lanjut tentang konsep yang diberi.
62.	Puzzle It Out (Selesaikan)	Pelajar diberi maklumat yang tidak mengikut susunan. Pelajar dikehendaki berbincang dan menyusun maklumat.
63.	Cloze Procedures (Isikan tempat kosong)	Pelajar diberi helaian tugasan dimana mereka perlu mendengar dengan teliti dan mengisi tempat-tempat kosong dengan maklumat yang sesuai/tepat.
64.	Rubrics (Rubrik)	Satu strategi untuk menilai pencapaian pelajar contohnya persembahan pelajar. Pelajar akan diberitahu ciri-ciri yang terkandung dalam rubrik.
65.	Iceberg (Bongkah ais/Aisberg)	Satu strategi untuk mengumpul maklumat daripada pelajar berkenaan topik yang diberi: - Fakta asas / maklumat biasa berada di hujung bongkah ais. - Maklumat yang lebih kompleks berada di paras bawah.
66.	Timeline (Garisan Masa)	Strategi yang digunakan untuk mencatat maklumat pelajar atau topik – satu bentuk klasifikasi atau ranking. Dulu Sekarang Masa depan ⊢————⊣————⊣————⊣

67.	Dip (Cerun/Lurah)	Pelajar menanda rajah cerun/lurah untuk menunjukkan tahap kefahaman mereka berkenaan sesuatu topik. Inquire (Tanya) — Understand (Faham) — Learn (Belajar)
68.	GRASPS	Strategi ini digunakan untuk menilai persembahan atau hasil kerja pelajar. Pelajar diberi borang GRASPS untuk diisi diperingkat awal projek mereka. -Goal (Gol/Target) -Role (Peranan) -Audience (penonton/hadirin/pembaca) -Situation (Situasi) -Product, Performance & Purpose (Produk, Penyampaian & Tujuan) -Standards & Criteria for Success (Ciri/ Kriteria kejayaan)
69.	Quick Quiz (Kuiz Kilat)	Kuiz yang digunakan untuk menguji kefahaman pelajar tentang pengetahuan sedia ada atau apa yang telah mereka pelajari (awal / akhir PdP).
70.	Artscape (Lakaran)	Guru memainkan muzik/lagu (jika mahu) dan pelajar diminta melakar/melukis (menggunakan warna) di atas kertas kosong apa yang mereke suka, untuk mencerminkan kefahaman mereka tentang apa yang dipelajari.
71.	Mind Map (Peta Minda)	Satu strategi untuk memberi peluang kepada pelajar untuk menunjukkan kefahaman mereka tentang sesuatu topik yang diajar. Peta minda *i-think* adalah satu contoh peta minda yang digalakkan.
72.	Attitude Movement (Pergerakan mengikut Pendapat)	Guru menampal kenyataan-kenyataan berkaitan isu/topik yang telah dibincang di sekeliling bilik/dewan dan pelajar diminta membaca setiap kenyataan dan berdiri/berkumpul di tempat kenyataan yang mereka setujui.

73.	Chart and Share (Catat & Kongsi)	Borang '*Chart and Share*' diberi kepada pelajar dan mereka berbincang dan mengisi borang serta berkongsi maklumat/idea dengan kumpulan yang lain.
74.	Table Cloth (Alas Meja)	Guru menyediakan soalan di atas kertas yang besar yang diletakkan di atas meja. Pelajar bergilir-gilir untuk menulis jawapan mereka di atas kertas itu.
75.	Collaboration (Kolaborasi)	Pelajar diberi tugasan untuk membuat tugasan secara kumpulan dan bekerjasama dengan kumpulan-kumpulan lain untuk melengkapkan / menyiapkan tugasan.
76.	Stretch to Sketch (Lukis mengikut Kreativiti)	Guru memberi arahan/maklumat untuk membantu pelajar melukis (secara individu) tetapi mereka juga dikehendaki menggunakan kreativiti masing-masing untuk berbuat demikian. Hasil kerja pelajar ditampal dan guru akan memberi pengiktirafan/hadiah kepada lukisan yang paling tepat/kreatif.
77.	Drawing Posters (Melukis Poster)	Berdasarkan arahan/maklumat yang diberi, pelajar melukis poster secara berkumpulan, tanpa menggunakan perkataan/ayat.
78.	Thumbs Up (Isyarat Tangan)	Satu cara guru menilai pelajar apabila ditanya soalan, pelajar memberi isyarat tangan seperti berikut: -*Thumbs up* (bagus/ faham) -*Thumbs middle* (kurang faham/kurang pasti) -*Thumbs down* (tidak faham)
79.	Compass Points (Tanda Kompas)	Selepas PdP, guru boleh mengedar borang untuk disi oleh pelajar secara individu : -*Excited* (Seronok) -*Worrisome* (Risau) -*Need to know* (Ingin tahu) -*Suggestions* (Cadangan)
80.	Exemplars (Contoh)	Guru menggunakan contoh-contoh yang baik dalam PdP untuk mengukuhkan kefahaman pelajar.
81.	Personal Action Plan (Pelan Tindakan Peribadi)	Setiap pelajar dikehendaki membuat pelan tindakan peribadi berkenaan pembelajaran mereka tentang topik/isu contohnya: *Segera 1 bulan 6 bulan 1 tahun* I————I————I————I————I

82.	Self Reflection (Refleksi Kendiri)	Selepas ,mempelajari sesuatu topik, setiap pelajar diminta menulis kehendak/pendapat mereka mengikut perkara di bawah: One thing I will… (Satu perkara yang saya …) 1. *start doing* (akan mula buat) 2. *stop doing* (akan berhenti lakukan) 3. *do more of* (akan buat lebih lagi) 4. *do less of* (akan kurangkan)
83.	"Post It" Notes (Nota Catatan)	Pelajar diminta menulis catatan di atas sekeping kad/kertas dan tampalkan di papan kenyataan selepas PdP.
84.	Talk Partners (Pasangan Berbual)	Pelajar diberi peluang untuk berbual dan berbincang dengan pasangan/rakan tentang apa yang mereka telah pelajari.
85.	Webs / Spider Diagrams (Rajah Sarang Labah-labah)	Strategi ini hampir sama dengan menyediakan peta minda. Pelajar digalakkan mencatat idea mereka dalam bentuk yang kreatif.
86.	Make predictions (Membuat jangkaan/andaian)	Pelajar diminta membuat andaian/jangkaan sebelum demo/ujikaji dibuat. Setelah tamat demo/ujikaji, pelajar diminta berbincang samada andaian/jangkaan mereka betul, salah atau kurang tepat.
87.	Rocket Writing (Penulisan Pantas)	Jangka masa diberi (contohnya 3 atau 5 minit) untuk pelajar menulis apa yang mereka tahu berkenaan dengan topik/soalan yang diberi.
88.	Constructivism (Konstruktivisme)	Strategi ini menggalakkan pelajar melalui proses pembelajaran yang bermakna dengan membina idea-idea baru. Proses ini melibatkan : - Generate (Bina/Jana) - Sort (Susun) - Connect (Gabung/Hubung) - Elaborate (Hurai/Jelaskan)

BAHAGIAN PENDIDIKAN MENENGAH MARA

Bahan Bantu Belajar/ Sumber Rujukan
Teaching & Learning Aids/ References

THE BASIC LESSON PLAN (RANCANGAN PENGAJARAN ASAS)	
Topic/ Topik	
Class/ Kelas	
Date (S)/ Tempoh	
State Standards/ SP	
Objectives/ Objektif	
Resources Needed/ Sumber	
Accommodations Needed/ Keperluan pelajar	
Activities to Engage Students (attach copies)/ Aktiviti pelajar	
Assessment (including homework if applicable)/ Penilaian	
Reflection/ Refleksi	

THE BASIC LESSON PLAN	
Topic	What specific aspect of the unit will be my focus? How does this topic relate to the lessons before and after it?
Class	Who will be the students participating in this lesson?
Date (S)	How long will it take to teach this topic?
State Standards	What state standards are addressed by this lesson? What other state standards outside the subject area does this lesson plan address? For example, in Jin-Ah's class the oral presentation of the science project also relates to an English state standard on public speaking.
Objectives	What do students need to know by the end of this lesson to satisfy the curriculum requirements? What do I want students to know that will enhance their learning? What should students be able to do after this lesson? For example, one could follow this template : The students will (insert a verb) (insert the topic) and demonstrate this by (insert the assessment measure).
Resources Needed	What photocopies are needed? What materials need to be made, collected, or organized (media, lab materials, equipment, manipulative, books, etc.)?
Accommodations Needed	What are the special needs of some of the students? How will I differentiate instruction for various ability students? What additional resources or support may I need?
Activities to Engage Students (attach copies)	What will be my warm-up activity to activate students' thinking? How does this topic relate to students' prior learning? Based on my knowledge of the students, what additional scaffolding do I need to provide for them to access this topic? What instructional strategies work well?

	What activities have worked well in the past?
Assessment (including homework if applicable)	What will enhance student understanding and learning? Are there related assignments in the textbook or on a photocopy sheet that can used for homework? How will I provide feedback to the students?
Reflection	What changes did I make during the lesson and why? How did I alter the lesson between the different periods I taught it? What need to be done differently if this lesson is taught again? What worked well?

ORGANIZATIONAL TIPS	
Materials	If students commonly work in the same group, assign each group a container (dish tubs, baskets, and trays work well) that they can send one member to retrieve and return for each activity. It gives the students an incentive to treat the common supplies well.
	Place scissors, tape, stapler, hole punch, calculators, rulers, and other commonly needed items in a common place that students can access on their own.
	Have a can of sharpened pencils near the pencil sharpener. If the lead breaks during class, a student can place the pencil in the can and retrieve a sharpened one. At a more appropriate time (e.g., end of the lesson) the student can return the borrowed pencil and sharpen the one that was left (Thomson, 2002). HINT: The teacher may not have to buy the initial pencils, since pencils frequently can be found on the floor when they have rolled away under another desk. Just tell your custodian where retrieved pencils can be placed for student use.
	Keep extra school supplies on hand for students who forget or run out of their awn. Also, this is helpful when a new student arrives in class who may not have all the supplies needed.
	Set up numbered work stations with necessary supplies and assign students to matching work groups. This works well when students must go the equipment (e.g., science lab) versus taking the equipment to their desks.
Work Assignments	Set up collection trays for finished work labeled with either the subject for elementary classrooms or periods for secondary classrooms.
	Create wall organizers with identified bins for class assignments so that students can pick up missed work after a late arrival or an absence.
Lesson Plans	At the secondary level when there are multiple preps separated by brief breaks, it can be helpful to have a plastic file folder holder affixed to the wall so the teacher can pull the necessary folder.
	Keep plans in a binder that has divider pages for the different subjects/periods. Use plastic page protectors to hold copies of handouts and transparencies (make sure to have the "crystal clear" sleeves or else the transparency will have to be removed from the sleeve).
	Organize lesson plans electronically. If the room is equipped with a monitor for PowerPoint presentations, use the first slide to identify the

	title and the second slide the goals; this not only organizes the students, but also reminds the teacher as well.
Emergency Procedures	Post fire and tornado information in the room. Include labeled maps of where to go when exiting the classroom for tornado and fire drills / emergencies.
	Know the location of the nearest fire extinguisher and fire alarm pull.
	Train students to know what to do in an emergency situation.
	Clearly label the office call button so substitute teachers can immediately identify it if an emergency occurs.
	Keep a list of all students who may require medical attention in your grade book. Know the protocol for what to do, for example, diabetics, bee stings, epileptic seizures, etc. as appropriate, alert substitute teachers.
	If in a specific-use classroom, such as science, know how to operate the eyewash station and shower, the location of the emergency shut-off valves in the room, and where safety equipment is stored.
Schedules	Display a poster with the basic flow of the day (i.e., bell changes in secondary school or in elementary school when reading, math, resource classes, lunch, science, social studies, etc. occur).
	Write a daily agenda for students to know what to expect in terms of the day's objective (see Chapter 5 on writing informational objectives), activities, and homework. Note
	Create a Web page with weekly assignments listed and hyperlinks to possible resources.
Classroom Displays	Have a board for "works in progress" where students can post work on which they want constructive criticism from their peers (Thompson, 2002). Students wind up keeping this board ever changing.
	Use a blend of student-made and commercial products to display on the walls. An art portfolio works well to keep posters flat and poster board can be tabbed with headings of different units, so the teacher can pull out new material as appropriate for display.

QUESTIONING TECHNIQUES ANALYSIS CHART

Teacher's Name : _____   **Date** **:** _____   **Time** **:** _____

Observer's **Name** **:** _____   **Grade/Subject** **:** _____

Record all the questions asked by the teacher orally and in writing during the lesson. Place sample questions in the space beneath the appropriate level. Then tally the number or questions by level and calculate a percentage.

TYPE OF QUESTION	TOTAL #	PERCENT
Recall How do you figure the mean? What is another word for mean? How do you calculate the mode? What is the median? The range? (2 questions) Where is the x-axis? What was being counted? How did we count?	16	38%
Comprehension What did you figure out was the average amount of time spent on HW?... watching TV?... sleeping? (3 questions) What activity do students spend the most time doing on average? What type of graph should be used here? What should the x-axis be labeled? What should we label the y-axis as? Title?	16	38%
Application and beyond (analysis, synthesis, evaluation) Why is the bar graph the best choice? What does the graph tell us? If you had to make a prediction about how another 6th grade class spent their time what would you say? What does the data tell us that the graph doesn't show? What is the advantage of graphing this data?	10	24%
Total of all questions	**42**	**100%**

However, the chart is useful for starting a dialogue about what is occurring in the classroom and how attentive and involved the students appear to be during the lesson. It is unlikely that 100 percent of the students will be engaged throughout the whole lesson.

OVERALL TIME USE IN CLASSROOM

Observer : _____   **Date :** _____   **Time :** _____

Teacher : _____   **Number of Students :** _____

Note only major activities (e.g. math lesson, reading groups, recess, etc.), but record all major changes in activities.

START & END TIMES	MAJOR ACTIVITY FOR STUDENTS IN CLASS

INSTRUCTIONAL RESOURCES

Topic: _____

Directions : Use this sheet as an organizer of key resources that can be accessed as different topics are addressed during lesson planning or in class.

Resources in the School
List any items that need to be reserved for use during study on this topic (e.g., incubator, graphing calculators, outdoor classroom, computer room, class set of novels).

_____
_____

Resources in the Classroom
List resources that are in your possession that specifically relate to this topic.

_____
_____

Print Resources
Include professional reference books, journal articles, and reading material that would be appropriate for students.

	For Student Use

Web Sites

Site Name	**Web Address**	**Description**

Speakers – Include their name, specific area of expertise, and contact information

_____
_____

Possible Field Trip Sites

_____
_____

INSTRUCTIONAL RESOURCES *(sample)*

Topic : _Genetics_

Directions : Use this sheet as an organizer of key resources that can be accessed as different topics are addressed during lesson planning or in class.

Resources in the School
List any items that need to be reserved for use during study on this topic (e.g., incubator, graphing calculators, outdoor classroom, computer room, class set of novels).
> _**Computer room for the scavenger hunt on inherited diseases**_

Resources in the Classroom
List resources that are in your possession that specifically relate to this topic.
> _**Fruity fly kit**_

Print Resources
Include professional reference books, journal articles, and reading material that would be appropriate for students.

	For Student Use
**Cartoon Guide to Genetics by Larry Gonick**	X
**The Human Genome by Carin Dennis and others**	
**Scientific American issues with "Exploring your destiny"**	X
**File folder of collected lesson plans and activities**	

Web Sites

Site Name	Web Address	Description
Genetic Lesson Plan Ideas	**http://www.kumc.edu/gec/lesson.html**	**Web site links to everyone**
Genetic Science Learning Centre	**http://gslc.genetics.utah.edu/**	**Univ. of Utah site – has a mouse cloning simulation**
Human Genome Project	**http://www.ornl.gov/TechResources/ Human_Genome/project/about.html**	**Information on the project started in 1990**

Speakers – Include their name, specific area of expertise, and contact information

Ryan Graham, horse breeder – taught his daughter, Heather in 2002
Presentation on the role of genetics in breeding race horses. Call Sunny Grove Farms

Possible Field Trip Sites
Zoo to learn about their endangered species breeding program.

RECORD OF INSTRUCTIONAL STRATEGIES USED

Categories*	Strategy	Tally	Total	Category Total
Identifying similarities and differences				
Summarizing and note-taking				
Reinforcing effort and providing recognition				
Homework and practice				
Representing knowledge				
Learning groups				
Setting objectives and providing feedback				
Generating and testing hypotheses				
Cues, questions, and advanced organizers				

Sample from Grace Fisher's Lesson Plan Book on Strategies Used in a Unit on Statistics and Data Analysis (6th grade)

Categories*	Strategy	Tally	Total	Category Total
Identifying similarities and differences	Venn Diagram	/	1	1
Summarizing and note - taking	Note-taking	—— //// //// //	12	12
Reinforcing effort and providing recognition	Test Review Game	/	1	1
Homework and practice	Practice problems from the text	/	1	4
	Independent practice	///	3	
Representing Knowledge	Modeling	/	1	1
Learning groups	Cooperative learning	////	4	7
	Think, pair, share	//	2	
	Stations	/	1	

Setting objectives and providing feedback	Pre-Assessment (ungraded)	/	1	13
	Homework	—//// ////	9	
	Individual Quiz	/	1	
	Group Quiz	/	1	
	Test	/	1	
Generating and testing hypotheses	Inquiry	/	1	2
	Inferences	/	1	
Cues, questions, and advanced organizers	Concept Map	/	1	1

Teacher Profile Analysis – Assets, Needs, and Possible Actions

Directions : Reflect on what is known about the teacher, Identify what talents, abilities, and knowledge the individual possesses that will be assets to the school and its students, and place these in the *Assets* column. Next, consider the needs or potential weaknesses that the teacher has and place them in the appropriate column. Finally, brainstorm possible actions you could take : professional experiences or available resources that could make a difference in this teacher's performance.

ASSETS	NEEDS	POSSIBLE ACTIONS

Reflection Dialogue Journal Entry

Dilemma

What did I perceive?

What were the alternative viewpoints?

What did I choose to do?

What else could I have done?

What additional actions should I take as a follow-up?

BAHAGIAN PENDIDIKAN MENENGAH MARA

Refleksi/Catatan
Reflection/ Notes

AMALAN REFLEKTIF

TUJUH (7) SOALAN DALAM AMALAN REFLEKTIF

1. Adakah saya mempunyai objektif yang jelas untuk sesi pengajaran ini? Apakah objektif itu?

2. Adakah objektif itu penting dalam kurikulum? Bagaimanakah saya mengetahuinya ?

3. Adakah aktiviti yang dirancang itu sesuai dengan objektif yang ditetapkan?

4. Apakah alat bantuan yang diperlukan bagi memudahkan pelajar memahaminya?

5. Apakah lagi yang perlu dilakukan untuk menjadikan sesi pengajaran dan pembelajaran menyeronokkan?

6. Bagaimanakah dapat saya tahu adakah pelajar memahami apa yang diajar? Apakah cara yang terbaik untuk menilai mereka?

7. Pada umumnya, apakah yang perlu saya lakukan untuk mengajar dengan lebih baik pada masa hadapan?

KESAN AMALAN REFLEKTIF

A. DIRI GURU

1. Mampu melihat diri sebagai guru yang mempunyai pengetahuan perguruan
2. Bersikap fleksibel dan bersedia untuk memberi perkhidmatan
3. Kebolehan pengaplikasian pengetahuan perguruan dengan situasi pelajar
4. Bersedia meningkatkan ilmu melalui kursus dan peristiwa yang dialami
5. Berkemahiran berkomunikasi pada semua semua peringkat dan situasi
6. Mengamalkan perkongsian pintar dalam bidang kepakaran
7. Mendapat pengiktirafan dalam komuniti sekolah, negeri, nasional dan antarabangsa
8. Berkebolehan memahami pelajar dan mengatur strategi berkesan dalam pengajaran dan pembelajaran
9. Peningkatan tahap akademik daripada sijil kepada ijazah, kemudian sarjana, seterusnya doktor falsafah
10. Amalan pembelajaran sepanjang hayat

B. PELAJAR

1. Mengalami keseronokan belajar
2. Dapat berkomunikasi dengan guru dan rakan
3. Dapat menerima proses pengajaran dan pembelajaran
4. Peningkatan pencapaian dalam peperiksaan dalam mata pelajaran tertentu
5. Peningkatan dalam kemahiran 3M (membaca, menulis dan mengira)
6. Peningkatan motivasi belajar
7. Peningkatan keyakinan diri
8. Peningkatan keyakinan diri
9. Peningkatan dalam akademik
10. Amalan pembelajaran sepanjang hayat

C. SEKOLAH

1. Pengurusan pentadbiran yang cekap dalam membuat pengagihan sumber yang saksama antara komuniti pelajar
2. Kerjasama guru dalam peningkatan akademik pelajar dan perkongsian pintar sesama guru
3. Peningkatan prestasi akademik sekolah kerana pelajar menyumbang ke arah ini
4. Peningkatan peratusan keputusan pelajar dalam peperiksaan awam
5. Ibu bapa yakin terhadap pengurusan sekolah dan layanan sama rata terhadap pelajar
6. Mendapat pengiktirafan atas sumbangan pentadbiran, guru dan pelajar

REFLECTING ON MY CURRENT PERFORMANCE

- **Reflection Learning Log**
i) What do I better understand now after studying and reflecting upon my teaching?
ii) What are the next steps to improve my performance?
iii) What resources (e.g. People, materials) are needed to enhance my teaching effectiveness?

REFLECTION SHEET/
BORANG REFLEKSI

Name/   :_____
Nama

School/   :_____
Sekolah

Grade Level/   :_____
Tingkatan

Subject/   :_____
Subjek

Date/   :_____
Tarikh

1. As I reflect on the lesson, to what extent were students productively engaged? (Component 4a)
Setakat mana pelajar memperlihatkan keterlibatan mereka dalam P & P.

2. Did the students learn what I intended? Were my instructional goals met ? How do I know, or how and when will I know? (Components 1f and 4a)
Dapatkah pelajar mempelajari apa yang hendak diajar? Adakah objektif tercapai? Bagaimana dan bila saya akan tahu?

3. Did I alter my goals or instructional plan as I taught the lesson? Why? (Components 1e and 3e)
Adakah objektif dan perancangan diubah suai semasa P & P? Mengapa?

4. If I had the opportunity to teach this lesson again to this same group of students, what would I do differently? Why? (Component 4a)
Jika saya berpeluang mengajarkan pelajaran ini semula kepada kumpulan pelajar yang sama, apakah yang akan saya ubah? Mengapa?

REFLECTING ON MY CURRENT PERFORMANCE

Reflection Learning Log

What do I better understand now after studying and reflecting upon my teaching?

What are the next steps to improve my performance?

What resources (e.g. People, materials) are needed to enhance my teaching effectiveness?

REFLECTION

PERIOD	BI	BM
Prior to teaching the unit (Sebelum pengajaran)	1. Why do we think that the unit or the selection of topics will be interesting? 2. What do students already know, and what can they do? 3. What have students encountered in this discipline before? 4. What does experiences tell us about what to expect in this unit? 5. What attributes of the learner profile does this unit offer students opportunities to develop? 6. What potential interdisciplinary connections can we identify? 7. What do we know about students' preferences and patterns of interaction? 8. Are there any possible opportunities for meaningful service learning? 9. What in the unit might be inspiring for community or personal projects? 10. Could we develop authentic opportunities for service learning? 11. How can we use students' multilingualism as a resource for learning?	1. Mengapakah kita berfikir bahawa unit atau pemilihan topik akan menjadi menarik? 2. Apakah yang sudah diketahui oleh pelajar dan apa yang boleh dilakukan oleh mereka? 3. Apakah pengetahuan sedia ada pelajar dalam bidang ini? 4. Daripada pengalaman, apakah yang dapat kita jangkakan dalam unit ini? 5. Apakah ciri-ciri profil pelajar dalam unit ini yang boleh dibentuk? 6. Apakah kaitan potensi interdisiplin yang dapat dikenal pasti? 7. Apakah yang kita tahu tentang keutamaan dan pola interaksi pelajar? 8. Adakah terdapat mana-mana peluang yang mungkin bermakna untuk perkhidmatan pembelajaran? 9. Apakah perkara dalam unit ini yang mungkin memberi inspirasi untuk komiti atau projek-projek peribadi? 10. Adakah terdapat peluang-peluang yang boleh dibangunkan untuk perkhidmatan pembelajaran? 11. Bagaimanakah keupayaan kedwibahasaan pelajar digunakan sebagai sumber pembelajaran?
During teaching (Semasa pengajaran)	1. What difficulties did we encounter while completing the unit or the summative assessment task(s)?	1. Masalah apa yang kita hadapi ketika melengkapkan unit atau penilaian tugas?

	2. What resources are proving useful, and what other resources do we need?	2. Sumber apa akan dibuktikan berguna, dan sumber-sumber lain yang kita perlukan?
	3. What student inquiries are emerging?	3. Apakah pertanyaan pelajar yang akan muncul?
	4. What can we adjust or change?	4. Apakah yang boleh kita sesuaikan atau tukar?
	5. What skills need more practice?	5. Apakah kemahiran yang memerlukan lebih latihan?
	6. What is the level of student engagement?	6. Apakah tahap penglibatan pelajar?
	7. How can we scaffold learning for students who need more guidance?	7. Bagaimanakah kita boleh rumuskan pembelajaran untuk pelajar yang memerlukan bimbingan yang lebih banyak?
	8. What is happening in the world right now with which we could connect teaching and learning in this unit?	8. Apakah yang sedang berlaku di dunia sekarang yang dapat kita hubung kaitkan dengan pengajaran dan pembelajaran dalam unit ini?
	9. How well are the learning experiences aligned with the unit's objectives?	9. Apakah pengalaman terbaik daripada pembelajaran yang selaras dengan objektif unit ini?
	10. What opportunities are we giving to help students explore the interpretative nature of knowledge, including personal biases that might be retained, revised or rejected? (DP theory of knowledge skills development)	10. Apakah peluang yang kita berikan kepada pelajar untuk membantu mereka meneroka tafsiran pelbagai pengetahuan, termasuklah pandangan peribadi yang berat sebelah iaitu dikekalkan, disemak atau ditolak?
After teaching (Selepas mengajar unit)	1. What were the learning outcomes of this unit?	1. Apakah hasil pembelajaran unit ini?
	2. How well did the summative assessment task serve to distinguish achievement levels?	2. Bagaimana pula tugas penilaian berfungsi untuk membezakan tahap pencapaian? Adakah tugas cukup kompleks untuk membolehkan pelajar mencapai tahap yang membanggakan?
	3. Was the task sufficiently complex to allow students to reach the highest levels?	
	4. What evidence of learning can we identify? What artifacts of learning should we document?	3. Apakah bukti pembelajaran yang kita boleh kenal pasti?
	5. Which teaching strategies were effective? Why?	4. Apakah perkara/artifak dalam pengajian yang harus kita dokumen?

| 6. What was surprising?
7. What student-initiated action did we notice?
8. What will we do differently next time?
9. How will we build on our experience to plan the next unit?
10. How effectively did we differentiate learning in this unit?
11. What can students carry forward from this unit to the next year/level of study?
12. Which subject groups could we work with next time?
13. What did we learn from standardizing the assessment? | 5. Strategi pengajaran yang mana berkesan? Mengapa?
6. Apa amat mengejutkan / mengagumkan?
7. Apa tindakan pelajar yang kita perasan /ketahui?
8. Apa yang akan kita lakukan secara berbeza pada masa depan?
9. Bagaimana kita akan menggunakan pengalaman kita merancang unit yang seterusnya?
10. Sejauh mana kita membezakan pembelajaran di unit ini?
11. Apa yang boleh dibawa oleh pelajar ke hadapan daripada unit ini untuk ke pada tahun/pengajian yang seterusnya?
12. Kumpulan subjek manakah yang dapat kita bekerjasama pada masa akan datang?
13. Apakah yang dapat kita belajar daripada penyelarasan penilaian? |

BAHAGIAN PENDIDIKAN MENENGAH MARA

Pengajaran & Pembelajaran Berasaskan Inkuiri
Inquiry Based For Teaching & Learning

5E MODEL OF INSTRUCTION

ENGAGE

The first phase is to engage the student in the learning task. The student mentally focuses on an object, problem, situation or event. The activities of this phase should make connections to past and future activities. The connections depend on the learning task and may be conceptual, procedural or behavioral.

Asking a question, defining a problem, showing a discrepant event, and acting out a problematic situation are all ways to engage the students and focus them on the instructional activities. The role of the teacher is to present a situation and identify the instructional task. The teacher also sets the rules and procedures for the activity.

The Student…	Explain Activities	The Teacher…
-Asks questions such as : • Why did this happen? • What do I already know about this? • What can I find out about this? • How can this problem be solved? -Shows interest in topic. -Responds to questions demonstrating their own entry point of understanding.	Initiate the learning task. The activity should make connections between past and present learning experiences, and anticipate activities and organize students' thinking toward the learning outcomes of current activities. • Generate interest • Access prior knowledge • Connect to past knowledge • Set parameters of the focus • Frame the idea	• Raises questions and problems. • Elicits responses that uncover students' current knowledge about the concept/topic. • Generates interest. • Generates curiosity.

EXPLORE

Once the activities have engaged students, they need time to explore their ideas. Exploration activities are designed so that all students have common, concrete experiences upon which they continue building concepts, processes and skills. This phase should be concrete and meaningful for the students. The aim of exploration activities is to establish experiences that teachers and students can use later to formally introduce and discuss content area specific concepts, processes, or skills. During the activity, the students have time in which they can explore objects, events, or situations. As a result of their mental and physical involvement in the activity, the students establish relationships, observe patterns, identify variables, and question events.

The teacher's role in the exploration phase is first and foremost to select activities that lead to *substantive concept building*. The teacher's role, then, is that of facilitator or coach. The teacher initiates the activity and allows the students time and opportunity to investigate objects, material, and situations based on each student's own ideas and phenomena. If called upon, the teacher may coach or guide students as they begin constructing new explanations.

The Student…	Explain Activities	The Teacher…
• Thinks creatively within the limits of the activity. • Tries alternatives to solve a problem and discusses them with others. • Suspends judgement. • Conducts activities, predicts, and forms hypotheses or makes generalizations. • Becomes a good listener. • Shares ideas and suspends judgement. • Records observations and/or generalizations. • Discuss tentative alternatives.	Provide students with a common base of experiences which current concepts, processes, and skills are identified and developed. • Experience key concepts. • Discover new skills. • Probe, inquire, and question experiences. • Examine their thinking. • Establish relationships and understanding.	• Elicits responses that uncover students' current knowledge about the concept/topic. • Raises questions and problems. • Acts as a facilitator. • Observe and listens to students as they interact. • Asks good inquiry-oriented questions. • Generates interest. • Generates curiosity

EXPLAIN

Explanation means the act or process in which concepts, process, or skills become plain, comprehensible, and clear. The process of explanation provides the students and teacher with a common use of terms relative to the learning experience. In this phase, the teacher directs student attention to specific aspects of the engagement and exploration experiences. First, the teacher asks the students to give their explanations. Second, the teacher introduces explanations in a *direct and formal manner*. Explanations are ways of ordering and giving a common language for the exploratory experiences. The teacher should base the initial part of this phase on the students' explanations and clearly connect the explanations to experiences in the engagement and exploration phases of the instruction model. The key to this phase is to present the concepts, processes, or skills briefly, simply, clearly, and directly, and then continue on to the next phase.

The Student…	Explain Activities	The Teacher…
• Explain possible solutions or answers to other students. • Listen critically to other students' explanation. • Questions other students' explanation. • Listens to and tries to comprehend explanations offered by the teacher. • Refers to previous activities. • Uses recorded observations in explanations. • Uses previous observations and findings. • Provides reasonable responses to questions.	Focus students' attention on a particular aspect of their engagement and exploration experiences, and provide opportunities for teachers to introduce a concept, process, or skill. • Connect prior knowledge and background to new discoveries. • Communicate new understandings. • Connect informal language to formal language.	• Formally provides definitions, explanations and new vocabulary. • Uses students' previous experiences as the basis for explaining concepts. • Encourages students to explain their observations and findings in their own words. • Provides definitions, new words and explanations. • Listens and builds upon discussion form students. • Asks for clarification and justification. • Accepts all reasonable responses.

ELABORATE

Once the students have an explanation of their learning tasks, it is important to involve them in further experiences that apply, extend or elaborate the concepts, processes or skills. Some students may still have misconceptions, or they may only understand a concept in terms of the exploratory experience. Elaboration activities provide further time and experience that contribute to learning. The teacher should provide opportunities for students to practice their learning in new contexts.

The Student…	Explain Activities	The Teacher…
• Applies new labels, definitions, explanations and skills in new, but similar, situations. • Uses previous information to ask questions, propose solutions, make decisions, design experiments. • Draws reasonable Conclusions from evidence. • Provides reasonable conclusions and solutions. • Records observations, explanations and solutions.	Challenge and extend students' conceptual understanding and skills. Through new experiences, the students develop deeper and broader understanding, more information and adequate skills. • Apply new learning to a new or similar situation. • Extend and explain concept being explored. Communicate new understanding with formal language.	• Expects students to use vocabulary, definitions and explanations provided previously in new context. • Encourages students to apply the concepts and skills to new situations. • Reminds and refers students of alternative explanations. • Uses previously learned information as a vehicle to enhance additional learning. • Encourages students to apply or extend the new concepts and skills. Encourages students to use terms and definitions previously acquired.

EVALUATE

At some point, it is important that students receive feedback on the adequacy of their explanations. Informal evaluation can occur from the beginning of the teaching sequence. The teacher can complete a formal evaluation after the elaboration phase. As a practical educational matter, teachers must assess educational outcomes. This is the phase in which teachers administer formative or summative evaluations to determine each student's level of understanding. This also is the important opportunity for students to use the skills they have acquired and evaluate their understanding. This is also the time when the teacher determines whether students have met the performance indicators.

The Student…	Explain Activities	The Teacher…
• Demonstrate an understanding or knowledge of concepts and skills. • Answers open-ended questions by using observations, evidence and previously accepted explanations. • Evaluate his or her own progress and knowledge. • Asks related questions that would encourage future investigations. • Provides reasonable responses and explanations to events or phenomena.	Encourage students to assess their understanding and abilities and provide opportunities for teachers to evaluate student progress. • Demonstrate understanding of new concept by observation or open-ended responses. • Apply within problem situation • Show evidence of accomplishment.	• Assesses students' knowledge and skills. • Observe students as they apply new concepts and skills. • Looks for evidence that students have changed their thinking. • Allow students to assess their learning and group process skills. • Asks open-ended questions such as, Why do you think..? What evidence do you have? What do you know about the problem? How would you answer the question? • Encourages students to assess their own learning.

MODEL INKUIRI

Inkuiri boleh dilaksanakan dalam pengajaran dan pembelajaran (P&P) dengan menggunakan pelbagai model mengikut kesesuaian mata pelajaran yang berkaitan. Namun begitu Model Pembelajaran 5E adalah model umum yang sesuai untuk diadaptasi dengan semua mata pelajaran dalam kurikulum kebangsaan.

MODEL PEMBELAJARAN 5E

Model Pembelajaran 5E merupakan model yang sering digunakan dalam melaksanakan inkuiri. Model pembelajaran 5E merupakan adaptasi model Biological Sciences Curriculum Study (BSCS) 5E Instructional Model [New Designs for Elementary School Science and Health (BSCS, 1989)]. 5E merujuk kepada lima fasa pembelajaran iaitu Pelibatan (Engagement), Penerokaan (Exploration), Penerangan (Explanation), Pengembangan (Elaboration) dan Penilaian (Evaluation).

Model Pembelajaran 5E mengandungi aktiviti-aktiviti berfokuskan pelajar. Pelajar akan melibatkan diri, meneroka, menerang, mengembangkan dan membuat penilaian seperti yang diterangkan dalam Jadual 1.

Jadual 1 : Penerangan Model Pembelajaran 5E

Fasa	Penerangan
Pelibatan (Engagement)	• Guru merangsang minda pelajar untuk menimbulkan rasa ingin tahu pelajar. • Guru memperkenalkan konteks. • Guru mencungkil pengetahuan sedia ada pelajar.
Penerokaan (Exploration)	• Pelajar membina pemahaman konsep berdasarkan aktiviti *hands-on*. • Pelajar menjalankan penyiasatan secara terbimbing atau terbuka bagi menjawab persoalan yang telah timbul. • Pelajar mencari maklumat/data menggunakan pelbagai sumber. • Pelajar menjalankan penyiasatan untuk menjana idea baharu atau menyelesai masalah. • Pelajar mereka bentuk dan melaksanakan penyiasatan.
Penerangan (Explanation)	• Pelajar membina penerangan dan idea lanjutan melalui refleksi tentang penyiasatan yang telah dilaksanakan. • Guru memberi input bagi menyemak pemahaman konsep yang telah dibentuk oleh pelajar.
Pengembangan (Elaboration)	• Pelajar mengembangkan pemahaman konsep melalui pengaplikasian dalam situasi baharu.
Penilaian (Evaluation)	• Penilaian berlaku di setiap fasa bagi mentaksir perkembangan pelajar. • Menggalakkan pelajar untuk menilai pemahaman dan kebolehan mereka.

*Penilaian boleh berlaku serentak dalam fasa-fasa yang lain.

PERANAN GURU DAN PELAJAR DALAM INKUIRI

Dalam melaksanakan Inkuiri, peranan guru dan pelajar penting dalam menentukan aktiviti berlangsung seperti yang dirancang. Berikut adalah peranan guru dan pelajar dalam inkuiri.

Jadual 2 : Peranan Guru dan Pelajar dalam Inkuiri

FASA	TINDAKAN GURU	PERANAN PELAJAR
Pelibatan (Engagement)	• Mewujudkan persekitaran pembelajaran untuk menarik minat dan perhatian pelajar. • Merangsang perasaan ingin tahu pelajar. • Menimbulkan soalan. • Mendapatkan maklum balas yang mendedahkan apa yang pelajar tahu atau fikirkan tentang sesuatu konsep atau topik.	• Menunjukkan minat dalam topik tersebut. • Bertanya soalan seperti : ➢ "Mengapa ini berlaku?" ➢ "Apa yang saya sudah tahu tentang perkara ini?" ➢ "Apa yang boleh saya ketahui tentang perkara ini?"
Penerokaan (Exploration)	• Menggalakkan pelajar untuk bekerjasama tanpa arahan daripada guru. • Memerhati dan mendengar murid semasa mereka berinteraksi. • Membimbing pelajar dengan soalan dari semasa ke semasa untuk membantu penyiasatan. • Memberi ruang kepada pelajar untuk memikirkan tentang persoalan. • Bertindak sebagai rujuk. • Meningkatkan semangat ingin tahu pelajar.	• Berfikir secara terbuka dalam ruang lingkup persoalan yang disiasat. • Menguji ramalan dan hipotesis. • Membentuk ramalan dan hipotesis baharu. • Meneroka dan membincangkan alternatif lain. • Merekod pemerhatian dan idea. • Bertanyakan soalan yang berkaitan. • Menangguhkan keputusan sehingga memperolehi data sokongan yang mencukupi.
Penerangan (Explanation)	• Menggalakkan pelajar untuk menerang dan mendefinisikan konsep menggunakan perkataan sendiri.	• Menerangkan cadangan penyelesaian dan jawapan. • Mendengar penerangan pelajar lain secara kritikal.

	• Meminta justifikasi (evidens) dan penjelasan daripada pelajar. • Menjelaskan definisi, penerangan dan pelabelan baharu sekiranya perlu. • Menggunakan pengalaman sedia ada pelajar sebagai asas untuk menerangkan konsep. • Mentaksir peningkatan pemahaman pelajar.	• Menyoal penerangan pelajar lain. • Mendengar dan cuba memahami penerangan guru. • Merujuk kepada aktiviti terdahulu. • Menyediakan penerangan menggunakan maklumat pemerhatian. • Menilai kefahaman sendiri.
Pengembangan (Elaboration)	• Memastikan pelajar menggunakan definisi dan penjelasan yang telah diberikan. • Menggalakkan pelajar untuk mengaplikasikan konsep dan kemahiran di dalam situasi yang baharu. • Mengingatkan pelajar kepada penerangan alternatif. • Pelajar diminta untuk merujuk data dan evidens dan bertanya soalan berikut : ➢ "Apa yang telah anda tahu"? ➢ "Kenapa anda berfikir sedemikian?"	• Mengaplikasi definisi, penjelasan dan kemahiran dalam situasi yang baharu yang hampir sama. • Menggunakan pengetahuan sedia ada untuk menyoal, mencadangkan penyelesaian, membuat keputusan dan mereka bentuk penyiasatan. • Membuat kesimpulan munasabah berdasarkan evidens. • Merekod pemerhatian dan penerangan. • Menyemak kefahaman pelajar lain.
Penilaian (Evaluation)	• Memerhati pelajar apabila mereka mengaplikasikan konsep dan kemahiran baharu. • Mentaksir pengetahuan dan kemahiran pelajar. • Memerhatikan evidens yang menunjukkan perubahan tingkah laku dan pemikiran pelajar.	• Menjawab soalan terbuka menggunakan pemerhatian, eviden dan penjelasan yang telah diterima. • Mempamerkan kefahaman/pengetahuan tentang suatu konsep atau kemahiran. • Menilai kemajuan dan pengetahuan kendiri.

	• Membenarkan pelajar mentaksir pembelajaran kendiri. • Mengajukan soalan terbuka seperti berikut : ➢ "Mengapa anda berfikir sedemikian?" ➢ "Apakah evidens yang menyokong dapatan anda?" ➢ "Apa anda tahu tentang x?" ➢ "Bagaimana anda menerangkan x?"	• Mengajukan soalan untuk menggalakkan penyiasatan selanjutnya.

Adaptasi Peranan Guru dan Pelajar dalam Pengajaran dan Pembelajaran Inkuiri.

(Bybee, 2006)

TEKNIK PENYOALAN MODEL PEMBELAJARAN 5E

Teknik penyoalan kendiri dapat merangsang diri pelajar untuk menggalakkan mereka menjana pemikiran kreatif dan kritis semasa inkuiri. Penyoalan kendiri digunakan :

- Menilai pengetahuan sedia ada
- Menimbulkan minat
- Membina pemahaman yang mendalam
- Memantapkan pembelajaran
- Merangsang pemikiran kritis
- Mentaksir pembelajaran dan kemajuan
- Meneroka pandangan alternatif.

PENGLIBATAN (ENGAGE)	PENEROKAAN (EXPLORE)	PENERANGAN (EXPLAIN)	PENGEMBANGAN (ELABORATE)	PENILAIAN (EVALUATE)
Kemukakan Soalan Sebenar	Mencari Sumber	Interpretasi Maklumat	Kemukakan Soalan Sebenar	Refleksi
Apakah yang saya ingin tahu?	Apakah sumber yang membantu?	Adakad data relevan?	Apa fakta utama saya?	Apa yang saya pelajari?
Apa yang saya sudah tahu?	Di manakah sumber boleh diperolehi?	Bahagian mana yang menyokong data?	Siapakah sasaran saya?	Apakah yang telah saya lakukan?
agaimana saya tahu?	Adakah sumber itu sah?	Data mana yang tidak menyokong?	Apa lagi yang penting?	Adakah yang saya lakukan itu betul?
Apakah jawapannya?	Adakah terdapat sumber lain?	Adakah teknik penyoalan betul?	Bagaimana saya melaporkan?	Apakah cadangan dan implikasinya?

BAHAGIAN PENDIDIKAN MENENGAH MARA

Contoh-contoh RPH Subjek KSSM
Samples of KSSM Lesson Plans (By Subjects)

RANCANGAN PENGAJARAN HARIAN

SUBJEK : BAHASA MELAYU

TINGKATAN	2			KELAS	201
TARIKH	27 JUN 2018	**MINGGU**	3	MASA	9.30-10.30 PAGI
TEMPAT	MAKMAL KOMPUTER 2			KEHADIRAN	/29

TEMA/TOPIK/ BIDANG PEMBELAJARAN	KESIHATAN DAN KEBERSIHAN
STANDARD KANDUNGAN	1.1 Mendengar, mengenal pasti dan menyebut perkataan, rangkai kata, istilah dan ungkapan serta intonasi ayat dalam pelbagai ujaran.
STANDARD PEMBELAJARAN	1.1.1 Mendengar, mengenal pasti dan menyebut perkataan, rangkai kata, istilah dan ungkapan dalam pelbagai ujaran dengan betul dan tepat.
OBJEKTIF PEMBELAJARAN/ KRITERIA KEJAYAAN	**Pada akhir pengajaran dan pembelajaran, pelajar dapat :** i.Mendengar cara sebutan perkataan, rangkai kata, istilah dan ungkapan dalam pelbagai ujaran dengan betul dan tepat berdasarkan rakaman audio petikan dialog. ii.Mengenal pasti dan menyebut tiga perkataan, tiga rangkai kata, tiga istilah dan tiga ungkapan dalam pelbagai ujaran dengan betul dan tepat.

LANGKAH-LANGKAH	AKTIVITI PENGAJARAN DAN PEMBELAJARAN	PENTAKSIRAN FORMATIF	PEMBEZAAN
PENGLIBATAN	i. Pelajar melihat gambar yang dipancarkan oleh guru tentang doktor yang sedang memeriksa pesakit. Kemudian pelajar diminta mencipta dialog berkaitan situasi tersebut. Guru bersoal jawab dengan pelajar dan mengaitkan jawapan pelajar dengan isi pelajaran pada hari ini. ii. Pelajar diminta untuk mendengar cara sebutan perkataan, rangkai kata, istilah dan ungkapan dalam pelbagai ujaran dengan betul dan tepat berdasarkan rakaman audio tentang perbualan antara doktor dengan pesakit. iii. Pelajar diminta untuk menyebut semula perkataan, rangkai kata, istilah dan ungkapan dalam pelbagai ujaran dengan betul dan tepat.	Soalan: - Apakah yang anda lihat daripada gambar ini? - Apakah dialog yang selalu dibicarakan oleh doktor dengan pesakit? - Bagaimanakah anda tahu mengenainya? **Senarai perkataan, rangkai kata, istilah dan ungkapan yang terdapat dalam petikan dialog.** Pemeriksaan, doktor, terukkah bengkaknya, dijangkiti penyakit ini, masalah, denyutan nadi,	-

		normal, kemerah-merahan, sebenarnya, keradangan tonsil, dijangkiti penyakit ini, jangan bimbang, imunisasi, bakteria, menghidap, penyakit selalunya datang, gaya hidup sihat, terima kasih.	
	iv. Pelajar dikehendaki menyatakan ciri-ciri perkataan rangkai kata, istilah dan ungkapan. v. Pelajar diminta untuk mengasingkan perkataan, rangkai kata, istilah dan ungkapan dalam bentuk peta pemikiran yang sesuai.	Mengenal pasti ciri-ciri perkataan, rangkai kata, istilah dan ungkapan dan mengasingkannya dalam bentuk peta pemikiran (peta pokok). **Soalan KBAT** - Berdasarkan audio tersebut nyatakan contoh perkataan, rangkai kata, istilah dan ungkapan. - Mengapakah kita perlu menggunakan perkataan, rangkai kata, istilah dan ungkapan yang tepat dalam perbualan? - Apakah perbezaan antara perkataan, rangkai kata, istilah dan ungkapan? - Bagaimanakah cara untuk memastikan mesej dapat disampaikan dengan berkesan?	
PENEROKAAN	- Para pelajar dibahagikan kepada lima kumpulan. - Pelajar perlu mengakses Internet untuk mendapatkan maklumat tentang pelbagai jenis penyakit. - Setiap kumpulan akan diberikan satu tajuk berkaitan penyakit tertentu. - Setiap kumpulan diminta memasukkan sekurang-	*Graffiti Wall* (pelajar mencatat maklumat dalam bentuk fakta, pendapat individu dan gambar berkaitan tugasan kumpulan). Pembentangan maklumat.	**Tajuk tugasan :** Pelajar dibahagikan kepada 5 kumpulan untuk melaksanakan tugasan berikut : Kumpulan 1 : Penyakit jantung Kumpulan 2: Penyakit darah tinggi

			Kumpulan 3: Penyakit kencing manis Kumpulan 4: Penyakit demam denggi Kumpulan 5: Obesiti
PENERANGAN	i.Pelajar diminta membentangkan hasil kerja kumpulan dengan intonasi ayat dalam pelbagai ujaran. ii.Pelajar-pelajar lain mengemukakan soalan kepada kumpulan pembentang untuk menambahkan maklumat dan idea. Contoh soalan: - Nyatakan punca utama penyakit tersebut? - Bagaimanakah rawatan tradisional dapat merawat penyakit ini?	**Soalan KBAT** i. Sebut mana-mana tiga perkataan, tiga rangkai kata, tiga istilah dan tingkat ungkapan yang anda peroleh daripada hasil pembentangan rakan. - Bersoal jawab berkaitan penyakit. Contohnya tentang punca, langkah, kesan	-
PENGEMBANGAN	i.Setiap kumpulan diminta menghasilkan satu pamflet berkaitan jenis-jenis penyakit yang telah dibentangkan sebelum ini. ii.Pelajar dikehendaki merujuk Kamus Dewan Bahasa untuk mendapatkan maksud yang tepat bagi perkataan, rangkai kata, istilah dan ungkapan.	Contoh-contoh produk (*pamflet).*	**Tugasan kumpulan :** -Setiap kumpulan diminta menghasilkan satu pamflet yang berbeza bentuk mengikut kreativiti kumpulan masing-masing.
PENILAIAN	Mengenal pasti dan menyebut perkataan, rangkai kata, istilah dan ungkapan dalam pelbagai ujaran dengan betul dan tepat.	Menyebut sekurang-kurangnya tiga perkataan, tiga rangkai kata, tiga istilah dan tiga ungkapan dalam pelbagai ujaran dengan betul dan tepat.	-
PENUTUP/ **RUMUSAN**	Pelajar membuat refleksi dengan cara menulis di atas kertas *sticky note*. Mereka menyatakan pendapat mereka/ perasaan/ pandangan berkaitan topik atau pdp pada hari itu. Guru memberikan respons dan merumuskan secara keseluruhan berdasarkan pendapat pelajar.	-	-

ELEMEN MERENTAS KURIKULUM (EMK)	i. Bahasa- Aspek sebutan ii. Kreativiti dan inovasi iii. Teknologi Maklumat dan Komunikasi (TMK) iv. Sains dan Teknologi
NILAI / SIKAP	- Kebersihan fizikal dan mental - Kerjasama - Semangat bermasyarakat - Keberanian
STRATEGI	- Pendekatan Pembelajaran berasaskan inkuiri - KBAT (menganalisis menilai dan mencipta) - Pembelajaran Koperatif
PEMBELAJARAN ABAD KE-21	- Berpusatkan pelajar - Penggunaan teknologi - Kreativiti - Komunikasi • Aktiviti – *graffity wall*, tugasan berkumpulan, menghasilkan pamflet
BAHAN BANTU BELAJAR/ SUMBER/ RUJUKAN	i. Rakaman audio– Dialog pemeriksaan kesihatan dalam laman web http://bukuteks.dbp.gov.my/media/media/NUh2hHpqpc.mp3 (27/6/2018) ii. Gambar iii. Komputer /Internet /LCD iv. Kad arahan tugasan berkumpulan v. Kertas sebak dan alat tulis vi. Kamus Dewan Bahasa Edisi keempat
REFLEKSI	i. Guru menekankan kemahiran mencari maklumat daripada sumber yang sahih dan tepat kepada setiap kumpulan pelajar. Contohnya, pelajar menulis info/ fakta tentang pelbagai jenis penyakit dengan mengakses ke laman sesawang yang sesuai contohnya: www.infosihat.gov.my. ii. Dalam sesi pengajaran dan pembelaaran ini, 29/29 pelajar dapat menguasai kemahiran mendengar dan bertutur dengan sangat baik apabila mereka berjaya mengenal pasti dan menyebut perkataan, rangkai kata, istilah dan ungkapan serta intonasi ayat dalam pelbagai ujaran dengan tepat dan betul. iii. Kelima-lima aktiviti yang berlangsung dengan sangat baik dan mewujudkan keceriaan di dalam kelas hasil respons pelajar yang proaktif. iv. Walau bagaimanapun guru boleh menambah soalan-soalan bercapah yang lebih mencabar pada sesi pengajaran akan datang untuk mendorong pelajar berfikir lebih luas.
CATATAN	**-RPH ini boleh digunakan untuk 2 atau 3 pertemuan.** Contoh Catatan: -2 orang pelajar (Muhamad Amirul dan Nurul Aina) tidak dapat hadir kerana pergi ke klinik. -Tugasan diberikan kepada pelajar iaitu latihan membina ayat berkaitan contoh perkataaan, rangkai kata, istilah & ungkapan.

LAMPIRAN:

DAILY LESSON PLAN				
SUBJECT : ENGLISH				

FORM	2			CLASS	
TARIKH		WEEK		TIME	1 hour
VENUE				ATTENDANCE	

THEME/TOPIC/ LEARNING AREA	PEOPLE & CULTURE : BODY IMAGE (NTB 2)
CONTENT STANDARD	MAIN SKILL: Literature in Action 5.1 Engage with, respond to and interpret a variety of literary text types. 5.3 Express an imaginative response to literary texts. Complementary Skill: Listening 1.1 Understand meaning in a variety of familiar contexts.
LEARNING STANDARD	MAIN SKILL: LiA 5.1.2 Identify and describe in simple language the key characters and themes in a text. Complementary Skill: Listening 1.1.1 Understand independently the main ideas in simple longer texts on a range of familiar topics & LiA : 5.3.1 Respond imaginatively and intelligibly through creating board games, puzzles and quizzes.
LEARNING OBJECTIVES/ SUCCESS CRITERIA	By the end of the lesson, pupils will be able to : 1. Identify and describe in simple language the key characters and themes in a text by coming out with meaning and messages behind the literary text (song). 2. Understand independently the main ideas in simple longer texts on a range of familiar topics by filling in the blanks in the song lyrics. 3. Respond creatively and critically to the task by creating a positive beauty advertisement.

STEPS	TEACHING & LEARNING ACTIVITIES	FORMATIVE ASSESSMENT	DIFFERENTIATION
ENGAGEMENT	Lyrics to the song "Scars to Your Beautiful" by Alessia Cara is distributed to the students. The lyrics contain some blanked out words. For starters, students fill in the blanks before the song is played. Then, T plays the song twice while students complete the lyrics. Students are given 15 minutes to discuss the themes, messages and the meaning of the song. (T guide students on how to draw	VIDEO CLIP ADVERTISEMENT/ COMMERCIAL	Strategy 2: Differentiate by the task pupils are given

EXPLORATION	connection between the song and the topic 'Body Image')		
	For the second part of the lesson, students are divided into 4 groups. Each group receives a print-out version of a beauty advertisement. Based on the particular beauty ad, each group improvise the beauty ad so that it sends a positive message about body image.	GRASPS	Strategy 3: Differentiate by the type and amount of support provided
EXPLANATION	For this task, a piece of coloured paper is distributed to each group. The group cut out pictures and words from the original ad / draw images from scratch to come out with an improved beauty ad that sends a positive message about beauty. Students are required to quote some parts of the lyrics to support the message behind their improvised 'beauty ad'.	3 STRAY, 1 STAY	
ELABORATION	Groups present their improvised beauty ad using 3 stray, 1 stay.		
EVALUATION	As reflection, students write their views on the 'problems' with the messages of current beauty ads they see on mass media in their journal.		
CLOSURE/ SUMMARISATION			
CROSS CURRICULUM ELEMENT	Noble values		
VALUE / SIKAP	Cooperation, kind		

STRATEGY	Problem-solving
21st LEARNING ACTIVITIES	3 Stray, 1 stay, GRASPS
TEACHING & LEARNING AIDS/ SOURCES/ REFERENCES	1. Scars to Your Beautiful : www.youtube.com/watch?v=MWASeaYuHZo 2. Print-out ads: https://mic.com/articles/118736/ads-around-the-world-illustrate-a-surprising-problem-with-beauty-standards SCARS-LYRICS VIDEO.mp4 3. ALESSIA CARA VIDEO.mp4 4.
REFLECTION	Mostly, students enjoyed the use of songs and videos, in any lesson. There were some students who knew the song by heart so other peers started to peek for answers. The weaker student required more guidance especially with the presence of slang / accent in the song. What I found most helpful was requiring the students to fill in the blanks before playing the song, as at least they got the idea what the song is about. This unit has helped the students to develop mostly caring, open-minded and reflective learner profiles in evaluating their relationships with their friends and how they view people as a whole – not just judging on the surface. Some of the difficulties encountered while carrying out the task was guiding students out of their 'comfort zones' such as teaching them about how different cultures have different perceptions of beauty. Which, given a majority of the students' backgrounds, is something they are not exposed to. For the ad activity, students were grouped based on different proficiency levels to allow scaffolding to take place. IMPROVEMENT: Assign roles to each member in the group so that everyone has shared responsibility.
REMARKS	Personal response on the topic discussed is given as homework in their journal.

Attachments

Goal :	Your goal is to improve the current standard of beauty ads that do not send positive messages about beauty.
Role :	You are a member of UNICEF.
Audience :	Community
Situation :	You need to come out with an alternative beauty ad that is more positive compared to the original ad.
Product :	You will cut out pictures and words from the original ad / draw images from scratch to come out with an improved beauty ad that sends a positive messages. Quote a line / phrase of the lyrics to support the message behind their improvised 'beauty ad'.
Standards :	You should be able to:

  i.   show excellent understanding of information, main ideas and supporting details as well as draw conclusions in the video.

  ii.   engage thoroughly with the ad by identifying ideas, opinions and attitudes to come out with a better version of an ad.

BEAUTY CAMPAIGN VIDEOS

DAILY LESSON PLAN

SUBJECT: SCIENCE

FORM	2			CLASS	
DATE		WEEK		TIME	
VENUE				ATTENDANCE	

THEME/TOPIC/ LEARNING AREA	Earth and Space exploration
CONTENT STANDARD	Other Objects in The Solar System: Meteoroids, Asteroids and Comets
LEARNING STANDARD	13.1.1 Communicate on other objects in the solar system, such as meteoroids, asteroids and comets. 13.1.2 Discuss the movements of meteoroids, asteroids and comets and their effects on the Earth based on data. 13.1.3 Generate ideas on how to reduce or prevent the possibility of asteroids colliding with the Earth.
LEARNING OBJECTIVES/ SUCCESS CRITERIA	At the end of the lesson, student is able to: (a) compare and contrast between meteoroid, asteroid and comet, (b) explain the movements of meteoroids, asteroids and comets and their effects on the Earth based on data, (c) predict what will happen to the Earth if it is hit by meteoroid, asteroid and comet.

STEPS	TEACHING & LEARNING ACTIVITIES	FORMATIVE ASSESSMENT	DIFFERENTIATION
ENGAGEMENT **(5 minutes)**	Students are shown a video from Armageddon (Link 1) Students are asked about the object that hit the earth Students respond to the answers appropriately leading to the introduction of the topic	**Observation & Questioning (open-ended questions)** Examples of question: 1. How is meteor attracted to earth? **(understanding)** 2. What is your observation about the object that hit the earth? **(knowledge)** 3. What will happen when meteor hit the earth? **(knowledge)** 4. What is the impact to the earth?	**21ˢᵗ T&L:** Video Clips **Visual & auditory learning style** Question delivered depends on the level of the achievement of the students

		(analysis)	
		5. What are the precaution steps to be taken when it hit the earth? **(understanding)**	
EXPLORATION **(12 minutes)**	----------------------------------- Students are divided into group of 4 8 stations are setup as followed: Station 1&2: Meteoroid Station 3&4: Asteroid Station 5&6: Comet Station 7&8: Movement of meteoroid, asteroid, comet. Students are asked to gather information from each station and write down on coloured paper given (3 minutes for each station) Students discuss among themselves about their findings at each station. -----------------------------------	*Do not accept crowd answers	**21ˢᵗ T&L:** Rotating Stations& Jot Thoughts Combination of variety of learning style: **kinesthetic, visual & auditory** Students walk around from station to station to: 1. see 2. think 3. discuss with other students about their finding. **21ˢᵗ T&L:** Presentation Verbal / Power Point / Graphic Organisers
EXPLANATION **(10 minutes)**	4 volunteers present their findings in front of the class. Students reemphasise extra important points using external source by the teacher (Link 2) -----------------------------------	**Presentation**	**Learning Modalities** Combination of variety of learning style: **kinesthetic, visual & auditory**
ELABORATION **(20 minutes)**	Board game are distributed to the groups. Students are given 15 minutes to complete the board game.	*Refer appendix 1 for board game	Students are divided in combination of different level of achievement (to avoid sedentary situation) – **multiple intelligences & small group instruction**

	Students discuss among themselves about their answer for each question in the work sheet given.		Teacher moves in between stations prompting question.
	-----------------------------------	**Worksheet**	
EVALUATION (10 minutes)	Students express their understanding about the topic.		
	Students are assigned questions from formative assessment in the text book to be completed as a homework.	**Sentence prompts:** *I understand ………. *I don't understand ………. *I need more information about …….	

CLOSURE/ SUMMARISATION (3 minutes)	Students are asked to respond to the assigned question and wrap up the topic based on the answer given.		
		Questioning (open-ended/closed-ended questions) Examples of question: 1. What is your conclusion about this topic? **(Evaluate)**	

CROSS CURRICULUM ELEMENT	Science and Technology
VALUE / SIKAP	Cooperative Systematic, confident & ethic Appreciate God's Gifts
STRATEGY	Contextual Cooperative and collaborative

21st LEARNING ACTIVITIES	Video Clips Rotating Stations Jot Thought Presentation
TEACHING & LEARNING AIDS/ SOURCES/ REFERENCES	**Video from youtube:** Link 1:https://www.youtube.com/watch?v=GbaQD6eF_qc Link 2:https://www.youtube.com/watch?v=dvd47rMYia0&t=5s **Board Game:** Link: https://www.lpi.usra.edu/education/space_days/
REFLECTION	• The best activity in this lesson was using board game because students can apply their multiple intelligence to complete the task. • If the students having problem in answering it during the activities, they can help each other through discussion and collaboration with others group. • They will generate their ideas about the topic and share it in their group. • Teacher will motivate the students by walking around and helps them by giving clues to the question.
REMARKS	<u>**Self-assessment:**</u> (Homework from text book) Practice 13 (page 277-278) Q1: **Knowledge** Q2: **Understanding** Q3: **Understanding** Q4: **Understanding, Evaluate** Q5: **Evaluate** Q6: **Analysis** Mastery 13 – HOTS (page 278) Q7: **Evaluate** Q8: **Evaluate**

Appendix 1

Space Rocks! A Giant Meteorite Board Game

Children assume the roles of meteorites and play a giant board game to learn about meteors, meteoroids, and meteorites. They compete to get to Antarctica, where they have the chance to be found and studied by scientists!

 What You Need:
- Copy of the Space Rocks game board (http://www.lpi.usra.edu/education/skytellers/meteors/activities/spacerocksgame.pdf)
- Colored markers
- Several large pieces of poster board
- Wide cellophane tape
- One die per child
- Game rules and answers for parents

 What to Do:

- Transfer the contents of each game board square to a separate poster board. Decorate the posters.

- Tape the posters to the floor, in order, with space between the posters; the objective is to allow several small groups of children to play the game at the same time – space will be needed. The posters do not have to be laid out in the same shape as the printed game board; posters can be taped, in order, along a long wall, for example.

- Invite the children and parents to take a die and play the game. Parents can be responsible for the game rules and for ensuring the responses are correct.

Space Rocks! A Giant Meteorite Board Game

Game Rules

Players begin in "The Meteoroid Zone," above Earth's atmosphere. They progress to "The Meteor Zone," where particles enter Earth's atmosphere and create brilliant streaks of light (meteors) as they race toward Earth's surface. Most burn up completely. Finally, they reach the "The Meteorite Zone," those rocks from space that passed through Earth's atmosphere without being vaporized may be found as meteorites.

The children's mission is to – as meteoroids - pass through Earth's atmosphere and reach Earth as a meteorite, where they can be found and tell their story to scientists.

Have each child begin as a "Meteoroid" on the "Start" square. Each child, in turn, will roll the die and move themselves the appropriate number of spaces. They are to follow the directions on the initial square on which they land.

"Query squares" have questions for the children to answer. When he or she answers correctly, as verified by the parent, he or she may advance to the next square and wait for his or her next turn to roll the die.

If a player answers incorrectly, he or she must remain on that square until their next turn and then try again to answer that same question correctly. Once they have answered correctly, they may advance to the next square and await their next turn.

As the children complete a track, they move to the next track. To win, the child must roll — in turn — until he or she lands on the last square in "Antarctica," where they may be discovered and studied by a team of scientists, and perhaps reveal clues to the mysteries of our early solar system!

Space Rocks! A Giant Meteorite Board Game Answers

Meteoroid Zone

A meteoroid can be a piece of what?
a. the Moon or Mars   **b.** an asteroid   **c.** a comet   **d. all of the above**

Are meteoroids really "shooting stars"?
No. Meteoroids do not have trails of light because they are not moving through Earth's atmosphere. Meteors, not meteoroids, are called shooting stars, but they are not really stars at all, either.

What is a meteoroid?
a. a rock from space found on Earth   **b.** a small minor planet   **c. a tiny particle, often no bigger than a grain of sand, orbiting around the Sun**

What does a meteoroid sometimes become?
a. a black hole   **b. a meteor**   **c.** a small planet
Meteoroids are smaller than objects scientists would call small planets. When a meteroid moves through Earth's atmosphere, it creates a brilliant streak of light — a meteor.

Often meteoroids are what?
a. the size of planets   **b. not much larger than a grain of sand**   **c.** solid gold

A meteoroid can be made of what?
a. metal (typically iron and nickel)   **b.** rock   **c.** metal and rock   **d. all of the above**

Where do meteoroids NOT occur?
a. throughout our solar system   **b.** in the asteroid belt   **c. on Earth**
Meteoroids are "rocks in space." When a meteoroid lands on Earth, it is called a meteorite.

Meteor Zone

What causes an "annual" meteor shower?
a. Earth passing through the debris of a particular comet in its orbit   **b.** favorable weather conditions   **c.** the birthdays of certain astronomers

What are meteors incorrectly called?
a. falling stars   **b.** shooting stars   **c.** fireballs   **d. all of the above**
Meteors are created by particles falling through our atmosphere — they have nothing to do with stars or fire!

Meteors are often seen as what?
a. particles in space **b. streaks of light** **c.** stars
Meteors are the streaks of light we see in the night sky. They are caused by particles moving through our atmosphere so fast that they compress the air in front of them and the air heats up and glows.

What are the names of two famous meteor showers that occur annually?
a. the Alphas and the Omegas **b. the Leonids and the Perseids** **c.** the Hatfields and the McCoys
When Earth's orbit intersects a comet's orbit, the particles in the comet's trail enter Earth's atmosphere and create meteor showers! The Perseid meteor shower peaks in August and radiates from the constellation of Perseus. It comes from particles in the trail of Comet Swift-Tuttle. The Leonid meteor shower peaks in November and appears to come from the direction of the constellation Leo.

How many meteors might you see in a meteor shower in an hour?
 a. 1 to 2 **b.** 1,000,000 **c. between 10 and a few hundred** Comet trails are dusty places!.

SPACE ROCKS!
— a game of meteors, meteoroids, and meteorites

START!

Meteoroid Zone →

QUERY:
A meteoroid can be a piece of what?
a. the Moon or Mars
b. an asteroid
c. a comet
d. all of the above

QUERY:
Are meteoroids really "shooting stars"?

YES   NO

QUERY:
What is a meteoroid?
a. a rock from space found on Earth
b. a small minor planet
c. a tiny particle, often no bigger than a grain of sand, orbiting around the Sun

The Danger Zone!
Will you be vaporized or will you survive???

Meteor Zone →

QUERY:
What causes an "annual" meteor shower?
a. Earth passing through the debris of a particular comet in its orbit
b. favorable weather conditions
c. the birthdays of certain astronomers

QUERY:
What are meteors incorrectly called?
a. falling stars
b. shooting stars
c. fireballs
d. all of the above

QUERY:
Meteors are often seen as what?
a. particles from space
b. fast moving streaks of light made of tiny particles of rock, dust, or ice.
c. stars

Land on Earth, the Meteorite Zone

Meteorite Zone →
Where will you land?
Will you be found???

OOPS!
You landed in the ocean and will probably never be found.
GO BACK 1 SPACE

You landed in the jungle and monkeys are playing with you.
GO BACK 1 SPACE

You are a meteoroid that was formed when an asteroid hit your planet. You were chipped off and launched into space!
MOVE AHEAD 2 SPACES

QUERY:
What does a meteoroid sometimes become?
a. a black hole
b. a meteor
c. a planet

You landed in a remote spot in the Australian desert where you are ready to be found, just as soon as someone comes by...
GOOD LUCK NEXT TIME!

You landed in Antarctica where your dark coloring makes you very visible on the white ice. CONGRATULATIONS! You will be found and carefully studied to gain clues to the age and origin of our solar system!

You are a lucky space rock that was big enough to make it through Earth's atmosphere without being vaporized.
Good Job!
MOVE AHEAD 2 SPACES

You were found by children playing in a school yard, but they didn't know you were 'special.'
GO BACK 1 SPACE

You almost made it to Earth, but exploded above the ground! (hey, it happens!)
GO BACK 2 SPACES

QUERY:
How many meteors could you see in a typical meteor shower?
a. 1-2
b. 1,000,000
c. between 10 and a few hundred

QUERY:
What are the names of two famous meteor showers that occur annually?
a. the Alphas and the Omegas
b. the Leonids and the Perseids
c. the Hatfields and the McCoys

Particles from the path of a comet. Particles from the comet's trail created a meteor shower for viewers on Earth.
MOVE AHEAD 2 SPACES

Earth passed through the

You're traveling with a large cluster of other meteoroids, and you get a 'group discount.'
MOVE AHEAD 1 SPACE

QUERY:
A meteoroid can be made of what?
a. metal (iron and nickel)
b. stone
c. metal and stone
d. all of the above

You just ran into a NASA Earth-observing satellite and dented its protective metal covering.
GO BACK 2 SPACES

Congratulations!
Today you celebrated your 4-1/2 billionth birthday!
MOVE AHEAD 2 SPACES

QUERY:
Often meteoroids are what?
a. the size of planets
b. not much larger than a grain of sand
c. solid gold

QUERY:
Where do meteoroids NOT occur?
a. throughout our solar system
b. in the asteroid belt
c. on Earth

You're a meteoroid that will travel through space forever and never land!
GO BACK 2 SPACES

You are one of 30,000 meteorites that reaches Earth's surface each year!

Enter Earth's atmosphere, the Danger Zone
Good Luck!

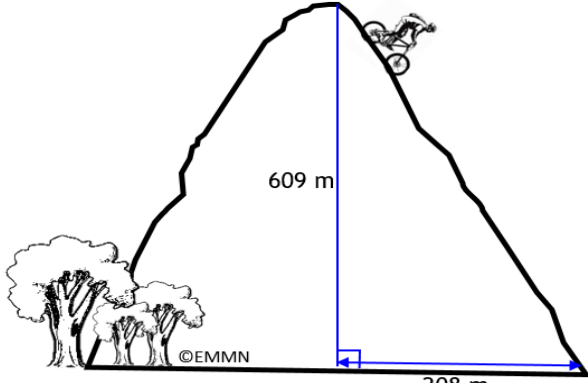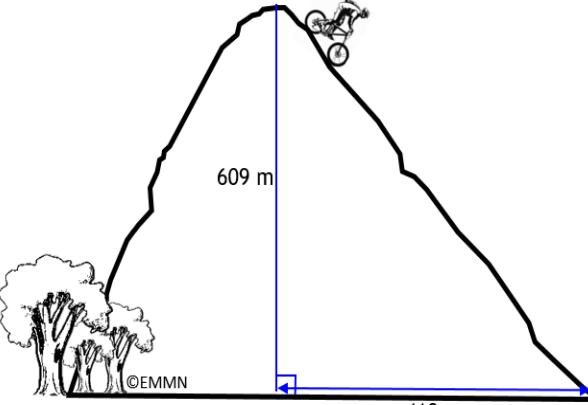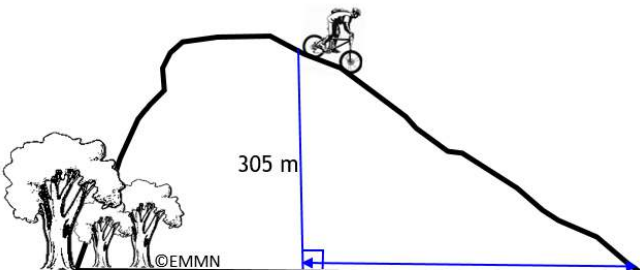| **DAILY LESSON PLAN**				
SUBJECT : MATHEMATICS				
FORM	2		**CLASS**	
TARIKH		**WEEK**	**TIME**	
VENUE			**ATTEND ANCE**	
THEME/TOPIC/ LEARNING AREA	10.0 GRADIENT OF A STRAIGHT LINE / RELATIONSHIP AND ALGEBRA			
CONTENT STANDARD	10.1 GRADIENT			
LEARNING STANDARD	10.1.1 Describe gradient and direction of inclination based on real life situations, and then explain the meaning of gradient as a ratio of vertical distance to horizontal distance. 10.1.2 Derive the formulae for gradient of a straight line in the Cartesian plane. 10.1.3 Make generalisation for the gradient of a straight line. 10.1.4 Determine the gradient of a straight line.			
LEARNING OBJECTIVES	At the end of the lesson, student is able to: 1. Describe steepness; the greater the gradient value, the steeper the slope of the straight line. 2. Determine the direction of the slope by referring to the sign value of the gradient. 3. Recognise gradient as the ratio of vertical distance to the horizontal distance. 4. Derive the formula of gradient of a straight line correctly.			
STEPS	**TEACHING & LEARNING ACTIVITIES**		**FORMATIVE ASSESSMENT**	**DIFFERENTIATION**

ENGAGEMENT
 	
 (5 mins)
	1. Teacher plays video on one (or combination of a few videos) of these videos:
	 i) Cute pandas playing on the slide
	 (Duration: 1.28 s)
	 Link:
	 https://www.youtube.com/watch?v=sGF6bOi1NfA
	
	 ii) Cycling up the hill
	    (Duration:1.29 s)
	    Link:
	
	 https://youtu.be/WkS8nzvqfPA
	
	 iii) Cycling down the steep damn
	    (Duration: 53s)
	    Link:
	
	 https://youtu.be/rDJX3mOAeM8
	
	 iv) Climbing up/down steep steps at Angkor Wat
	 (Duration: 1.20s)
	 Link:
	 https://youtu.be/qO6VUWg4nc4
				Work in pairs (excellent students work with slow learners) allows students of all abilities to be challenged.
				 -Excellent students must make sure that their pairs understand the videos and discuss about what they watched.
				
				 Use collaboration skills (gives different roles in one group) to help students work together to get maximum information when completing the task.

EXPLORATION **EXPLANATION** (25 mins)	2. Teacher asks students to discuss about: i) How fast the baby pandas can move down the slide? Which slide is steeper? Which slide is less steep? ii) Is it hard to cycle up the hill? Which one is faster; cycle up the hill or the other way around? iii) What precautions does the cycler take to cycle down the steeper dam? Do you think the cycler will take risk to cycle down the dam without the safety rope? iv) Which one do you find easier; to climb up the stairs or to climb down the stairs? 3. Teacher asks students to discuss in pairs about other example(s) they can relate to the above videos and write them on a piece of paper. 4. Students share the outcome of the discussion with the members of the class. 5. Teacher gives handout to the students. (Handout 1 To Derive a Formula of Gradient) (Handout 2 To Make Generalisation and To Determine The Gradient of A Straight Lines)	Think pair share and Shout-out. -students need to think and share their findings (steepness and direction)	Work in pairs (excellent students work with slow learners) allows students of all abilities to be challenged. -Excellent students must make sure that their pairs understand the videos and discuss about what they watched. Use collaboration skills (gives different roles in one group) to help students work together to get maximum information when completing the task. Collaboration -excellent students will assist their pairs in the discussion.
ELABORATION (8 mins)	6. Students sit in a group of 4 members. 7. Students fill in the handouts by discussing with their groupmates. 8. In groups, students derive the formula for gradient of a straight line. 9. Teacher facilitates during the group discussion to derive the formula.	Handout 1: To Derive a Formula of Gradient Handout 2: To Make Generalisation and To Determine The Gradient of A Straight Lines	Collaboration - excellent students will assist their groupmates in the discussion to complete the handouts. Each and every member of the group must come to the same understanding about the activities they're involved in and make correct generalisation about the formulae occurs.

EVALUATION (7 mins)	10. Teacher selects a group to present their findings. 11. Other groups evaluate the presentations of the selected group.	Presentation Indicator Green : agree Red : disagree	All students rise up green/red cards to express that they share the same idea about the activities based on the group presentations. One or two students who choose to rise up red cards will require by teacher to justify the reason for their evaluation towards the group presentation.
CLOSURE/ SUMMARISATION (5 mins)	12. Students write reflection on a sticky note and paste it on the reflection wall.	Reflection wall -To recall the concepts of today's lesson.	
CROSS CURRICULUM ELEMENT	-		
VALUE / SIKAP	Cooperative Thinker Rational Communication		
STRATEGY	Constructivism Inquiry discovery		
21st CENTURY LEARNING ACTIVITIES	Think-pair-share Collaborative Learning Critical thinking skills Indicator Presentation Shout out		

TEACHING & LEARNING AIDS/
 	
SOURCES/
 	
REFERENCES
	Mathematics Form 2 Textbook
	Textbook link (Steepness): http://rimbunanilmu.my/mat_t2e/ms190
	Textbook link (Gradient) : http://rimbunanilmu.my/mat_t2e/ms192
	Handout 1: Handout 1 To Derive a Formula of Gradient
	Handout 2: To Make Generalisation and To Determine The Gradient of A Straight Lines
	Gradient (Slope) of a Straight Line: https://www.mathsisfun.com/gradient.html
	
	Videos link:
	i) Cute pandas playing on the slide
	   (Duration: 1.28 s)
	   Link: https://www.youtube.com/watch?v=sGF6bOi1NfA
	
	ii) Cycling up the hill
	   (Duration:1.29 s)
	    Link: https://youtu.be/WkS8nzvqfPA
	
	iii) Cycling down the steep damn
	   (Duration: 53s)
	    Link: https://youtu.be/rDJX3mOAeM8		

	iv) Climbing up/down steep steps at Angkor Wat
	     (Duration: 1.20s)
	     Link: https://youtu.be/qO6VUWg4nc4

REFLECTION	1. The concept of gradient will influence the students' decision in deciding which location/place to cycle/climb or any other outdoor activities involving steepness. 2. Justification for their decision above will affect the results they will have to face. 3. The choices that students make will help teachers to understand their interest. 4. Tools recommended for these activities will help teacher to introduce the concept of gradient. Students will have the opportunity and support/access to many resources.
REMARKS	

Worksheet 1: To Derive Formula of Gradient

Complete the Table 1 below:

Diagram	Vertical distance	Horizontal distance	$\dfrac{\text{Vertical distance}}{\text{Horizontal distance}}=$ (write your answer correct to 2 d.p.)
609 m 208 m ©EMMN Figure 1			
609 m 410 m ©EMMN Figure 2			
305 m 410 m ©EMMN Figure 3			

Complete the Table 2 below:
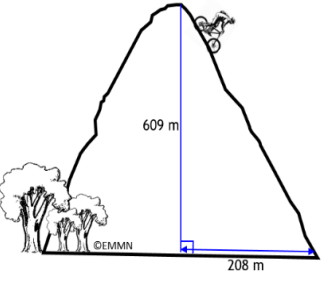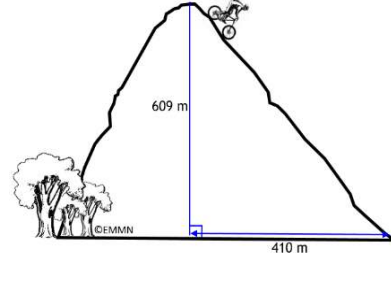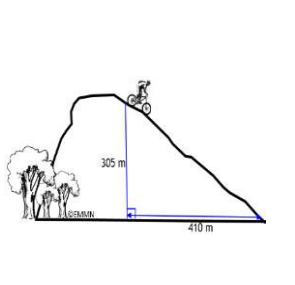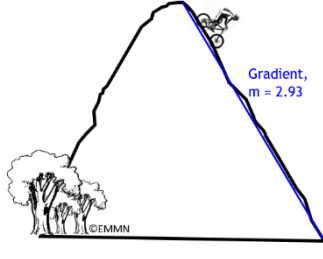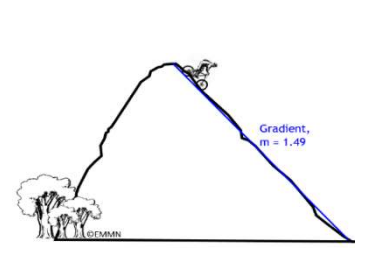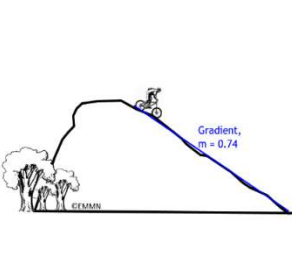
Description	Figure 1	Figure 2	Figure 3
Figure shows vertical distance and horizontal distance	609 m, 208 m	609 m, 410 m	305 m, 410 m
$\dfrac{\text{Vertical distance}}{\text{Horizontal distance}} =$			
Gradient or steepness of the figure is, m =	2.93	1.49	0.74
Figure shows gradient for each figure	Gradient, m = 2.93	Gradient, m = 1.49	Gradient, m = 0.74

Table 2

Based on Table 2, what will happen to (i) the slope/gradient and (ii) steepness of the gradient if:

(a) Vertical distance > Horizontal distance?

_____

_____

(b) Vertical distance < Horizontal distance?

_____

_____

(c) Vertical distance = Horizontal distance?

_____

_____

(d) From diagrams on Table 2, which one is more steep? Figure 1, Figure 2 or Figure 3?
Justify your answer.

Answer:

Figure

☐

_____
_____

(e) What is the relationship between vertical distance, horizontal distance and gradient?

_____
_____

Fill in the blanks with the correct answer.

1. The line is steeper and so the gradient is

			g	e	

2. The line is less steep and so the gradient is

	m			l	e	

You are ask to do cycling/wall climbing on the hill during activity's week. Which hill do you choose to do the activity? Figure 1, Figure 2 or Figure 3? What is important to you in making this decision? Why do you choose to cycle/climb the hill on Figure __ ?

_____

_____

_____

_____

_____

What can you conclude from the above activities?

_____

_____

_____

_____
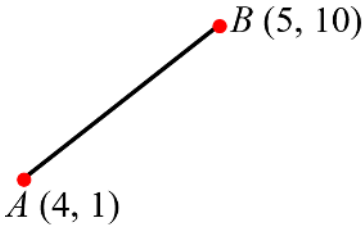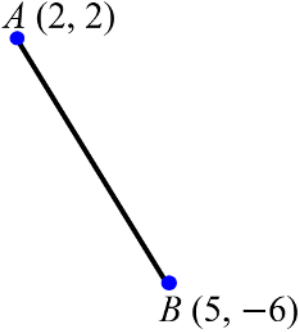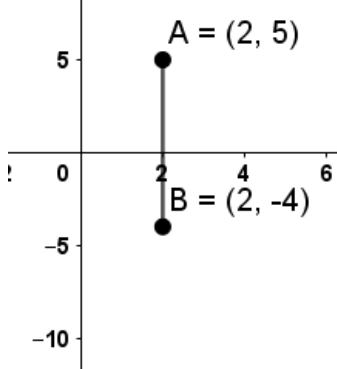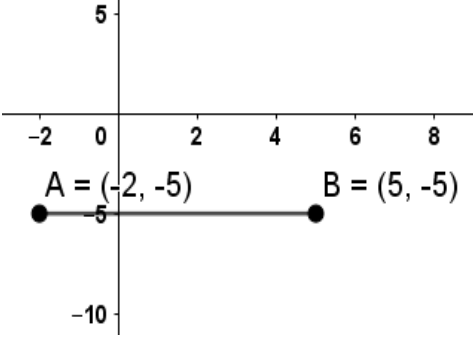
The formula of gradient is:

Gradient, m =

Worksheet 2: To Make Generalisation and to Determine the Gradient of a Straight Lines

Complete the Table 1 below:

Diagram (Point A → Point B)	Gradient	Direction of Inclination (Going up /Going down/ Straight across (horizontal)/ Straight up & down)	Value of gradient (Positive / Negative/ Zero/ Undefined)
1. B (5, 10) A (4, 1)			
2. A (2, 2) B (5, −6)			
3. A = (2, 5) B = (2, -4)			
4. A = (-2, -5) B = (5, -5)			
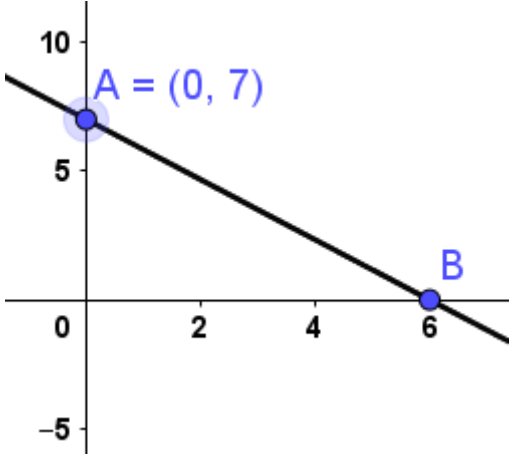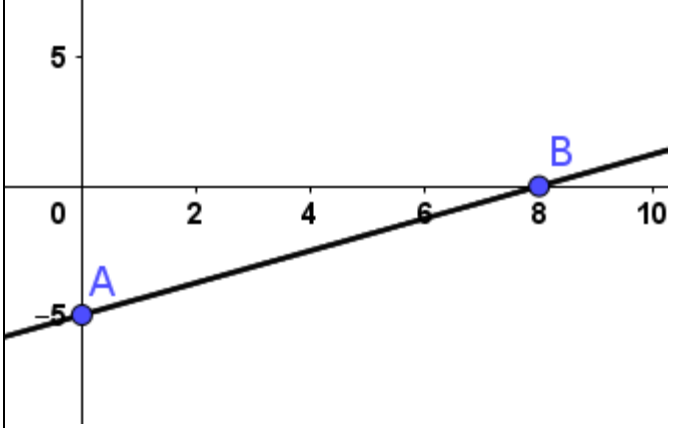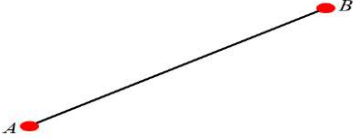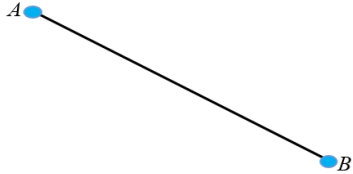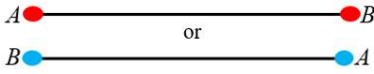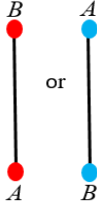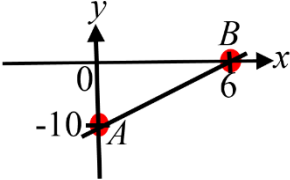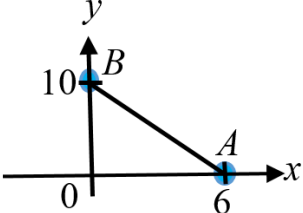
5.			
6.			

Table 1

Match the following:

Shape (Point A → Point B)	Direction of Inclination	Value of Gradient

Straight Across (horizontal)

Undefined

Going Up

Positive

Going Down

Negative

Straight Up or Straight Down

Zero

In what case the direction of inclination is:

(a) Straight across (horizontal)?

_____

_____

(b) Going up?

_____

_____

(c) Going down?

_____

_____

(d) Straight up or straight down?

_____

_____

Complete the sentence below:

The value of gradient is:

i)   undefined when …

_____

ii) positive when …

_____

iii) negative when…

_____

iv) zero when…

_____

RANCANGAN PENGAJARAN HARIAN				
SUBJEK : SEJARAH				
TINGKATAN	2	**KELAS**		
TARIKH		**MINGGU**		**MASA**
TEMPAT		**KEHADIRAN**		
TEMA/TOPIK/ BIDANG PEMBELAJARAN	5.0 KERAJAAN ALAM MELAYU			
STANDARD KANDUNGAN	5.1 Kerajaan Alam Melayu			
STANDARD PEMBELAJARAN	5.1.1 Menjelaskan konsep Alam Melayu 5.1.2 Menerangkan kewujudan kerajaan Alam Melayu K5.1.5 Menghuraikan kepentingan kedudukan strategik yang menyumbang kepada kemajuan sesebuah kerajaan			
OBJEKTIF PEMBELAJARAN/ KRITERIA KEJAYAAN	Pada akhir pengajaran dan pembelajaran, pelajar dapat : Menyatakan maksud Alam Melayu secara umum. Menjelaskan 3 bukti kewujudan Alam Melayu dengan tepat. Menghuraikan 2 kepentingan kedudukan strategik yang menyumbang kepada kemajuan sesebuah kerajaan.			
LANGKAH-LANGKAH	**AKTIVITI PENGAJARAN & PEMBELAJARAN**	**PENTAKSIRAN FORMATIF**		**PEMBEZAAN**
PENGLIBATAN /SET INDUKSI **(5 minit)**	1. Pelajar dibahagikan kepada beberapa kumpulan mengikut standard pembelajaran yang berbeza. Kump 1: Konsep Alam Melayu. Kump 2: Kewujudan Kerajaan Alam Melayu Kump 3 : Faktor kemajuan kerajaan Alam Melayu. 2. Pelajar mencari maklumat melalui kajian perpustakaan, kajian internet atau rujukan buku ilmiah tentang kewujudan Alam Melayu.	**Contoh Soalan:** • Apakah yang kamu tahu tentang peta ini? • Apakah kaitan gambar ini dengan Alam Melayu? • Bagaimanakah kedudukan lokasi Alam Melayu ini menjadikannya penting kepada dunia pada ketika itu?		4 kumpulan pelajar berdasarkan standard pembelajaran : Kumpulan 1 – Kumpulan 3

	3. Pelajar berbincang dan menganalisis maklumat yang diperoleh dan menterjemah hasil dapatan ke dalam bentuk peta pemikiran i-Think VIDEO SIAPA MELAYU.mp		
PENEROKAAN **(10 minit)**		**Contoh soalan:** • Apakah yang dimaksudkan dengan Alam Melayu? • Jelaskan bukti kewujudan kerajaan Alam Melayu? • Bagaimanakah kedudukan strategik mampu menyumbang kepada kemajuan sesebuah kerajaan? 1. Sumbang saran 2. 3 stray, 1 stay 1.Guru mengedarkan lembaran kerja set soalan. Soalan 1: Menjelaskan Konsep Alam Melayu. Soalan 2: Menyenaraikan 5 kerajaan Alam Melayu Soalan 3: Menerangkan faktor kemajuan kerajaan Alam Melayu. 2.Jawapan dari setiap kumpulan akan dipamerkan di papan putih.	
PENERANGAN **20 minit**	1. Pelajar secara berkumpulan membuat pembentangan tentang hasil dapatan kajian. 2. Menggunakan kaedah 3 stray, 1 stay untuk membuat catatan/ mendapatkan maklumat. 3. Pelajar dari kumpulan yang lain bersoal jawab dengan kumpulan yang membuat pembentangan. 4. Guru membuat peneguhan bagi setiap tajuk yang dibincangkan. 5. Guru dan pelajar bersama-sama menyemak setiap jawapan.		

PENGEMBANGAN **10 minit**	6. Kumpulan yang memperoleh markah tertinggi akan mendapat hadiah. 1. Aktiviti Quadrant dilakukan berdasarkan soalan: "Kedudukan strategik mempengaruhi kemajuan perdagangan sesebuah negara". 2. Pelajar akan menulis jawapan/pandangan kepada soalan yang diberikan. 3. Pelajar berbincang dan menulis jawapan yang disetujui/betul dalam bulatan.	Quadrant	
PENILAIAN **10 minit**	1. Setiap pelajar menjawab Quick Quiz secara bertulis. 2. Perbincangan jawapan bersama guru.	(Rujuk lampiran 3) Quick Quiz	
PENUTUP/ **RUMUSAN**	1. Pelajar membuat pembetulan / penambahbaikan bahan kuiz selepas disemak guru. 2. Pelajar / Guru membuat rumusan perkara yang telah dipelajari.	**Contoh soalan:** • Mengapakah kita harus berbangga dan bersyukur menjadi penduduk di kerajaan Alam Melayu.	
ELEMEN MERENTAS KURIKULUM (EMK)	BAHASA		
NILAI / SIKAP	PATRIOTIK, JATI DIRI & KEKITAAN		
STRATEGI	PEMBELAJARAN KOPERATIF		
PEMBELAJARAN ABAD KE-21	THREE STRAY ONE STAY QUADRANT PEMBENTANGAN		

BAHAN BANTU BELAJAR/ **SUMBER/ RUJUKAN**	1. Ismail Hussien,Antara Dunia Melayu dengan Dunia Kebangsaan, Bangi: Penerbit UKM,1993 hlm 14 2. https://ms.wikipedia.org/wiki/nusantara 3. Video: http://youtu.be/y9fyX1ukc2s 4. Kuiz VIDEO SIAPA MELAYU.mp4
REFLEKSI	**A** Pelajar-pelajar sangat aktif dan memberikan kerjasama yang baik dalam mematuhi arahan guru untuk mencari dan mencatatkan maklumat daripada pelbagai sumber seperti daripada internet dan buku ilmiah. Mereka menggunakan sumber yang telah dicadangkan oleh guru. Saya memberikan penekanan kepada kemahiran mencari maklumat daripada sumber yang sahih dan tepat.Antara persoalan yang dikemukakan oleh pelajar-pelajar adalah tentang aspek keserumpunan Alam Melayu. Bagi menjawab persoalan pelajar, saya telah memberikan contoh persamaan bunyi perkataan 5 (Lima) bagi beberapa etnik di Alam Melayu seperti sebutan perkataan dalam Bahasa Jawa, Bahasa Melayu Brunei, Tagalog, Melanau dan Kadazan. **B** Tugasan yang diberikan kepada pelajar boleh membezakan tahap pencapaian pelajar. Walaupun pelajar-pelajar dibenarkan menggunakan internet untuk mencari maklumat, saya perlu memberikan bimbingan dan memantau carian maklumat pelajar. Pada akhir proses PdP, satu set soalan(Quick Quiz) diedarkan kepada setiap pelajar bagi menguji kefahaman mereka tentang topik yang dipelajari pada hari itu. Guru dan pelajar telah bersama-sama berbincang jawapan Quick Quiz tersebut. Pelajar membuat pembetulan dan penambahbaikan kepada jawapan yang kurang tepat.
CATATAN	

Pentas Sunda

Lampiran 2

QUICK QUIZ

Jawab **semua** soalan.

1. (a)   Berdasarkan peta berikut, **namakan lima buah kerajaan Alam Melayu.**
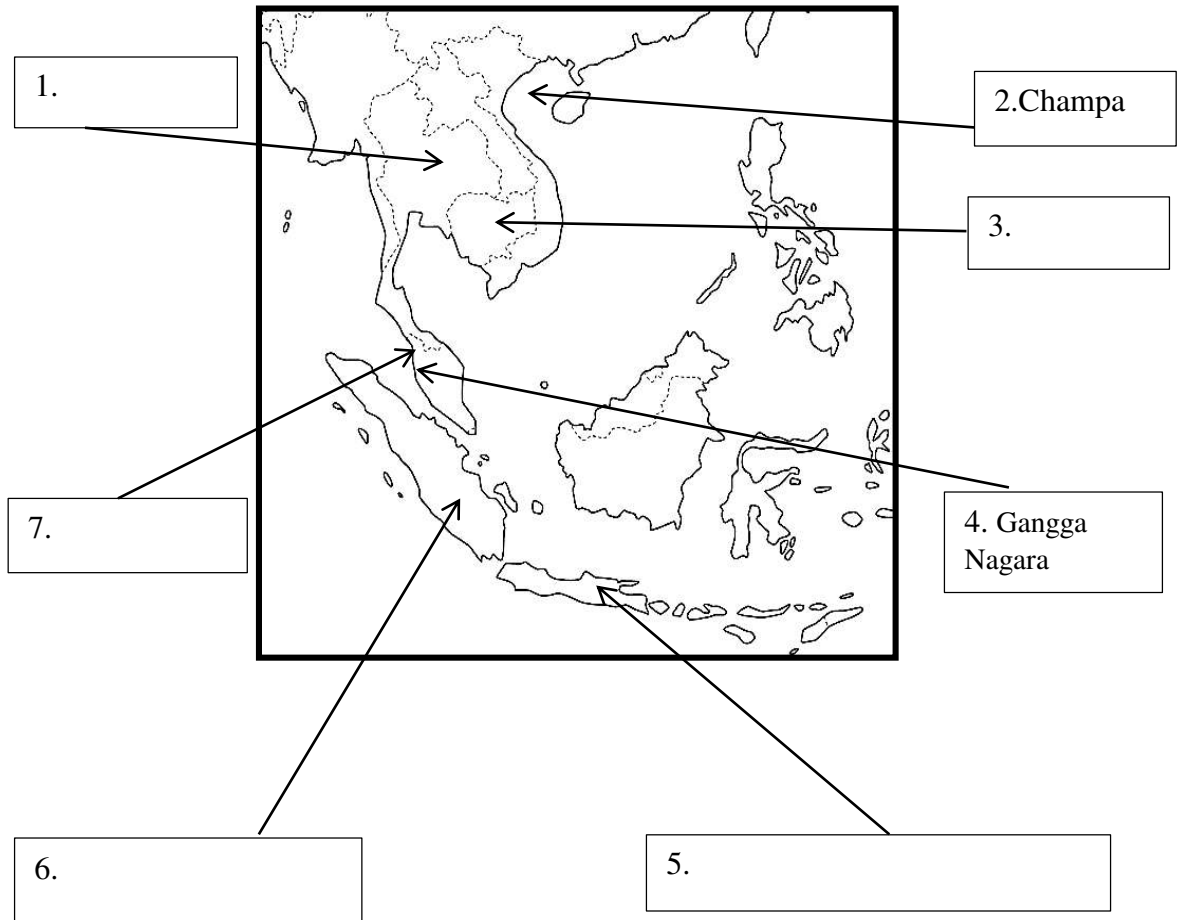
[5 markah]

(b) Padankan tokoh berikut dengan pandangan mereka tentang konsep Alam Melayu berdasarkan aspek geografi yang betul.

Profesor Tan Sri Emeritus Dato' Pendita (Dr.) Ismail Hussein

Alam Melayu meliputi kawasan dari Madagaskar ke Tanah Melayu, Papua New Guinea, Australia, New Zealand, Kepulauan Pasifik hingga ke Taiwan

Profesor Emeritus Dato' Dr. Nik Hassan Shuhaimi Nik Abdul Rahman

Alam Melayu merupakan suatu lingkungan geografi yang luas meliputi Kepulauan Melayu hingga selatan Thailand

Abdul Hadi Haji Hassan

Dunia Melayu meliputi selatan Vietnam, Kemboja, selatan Myanmar, Segenting Kra, Malaysia, Indonesia, Brunei dan Filipina

[3 markah]

1. (a)   Nyatakan lokasi kerajaan Alam Melayu berikut:

Kerajaan Alam Melayu

Kerajaan Funan	Kerajaan Srivijaya	Kerajaan Kedah Tua
Lokasi :	Lokasi :	Lokasi :
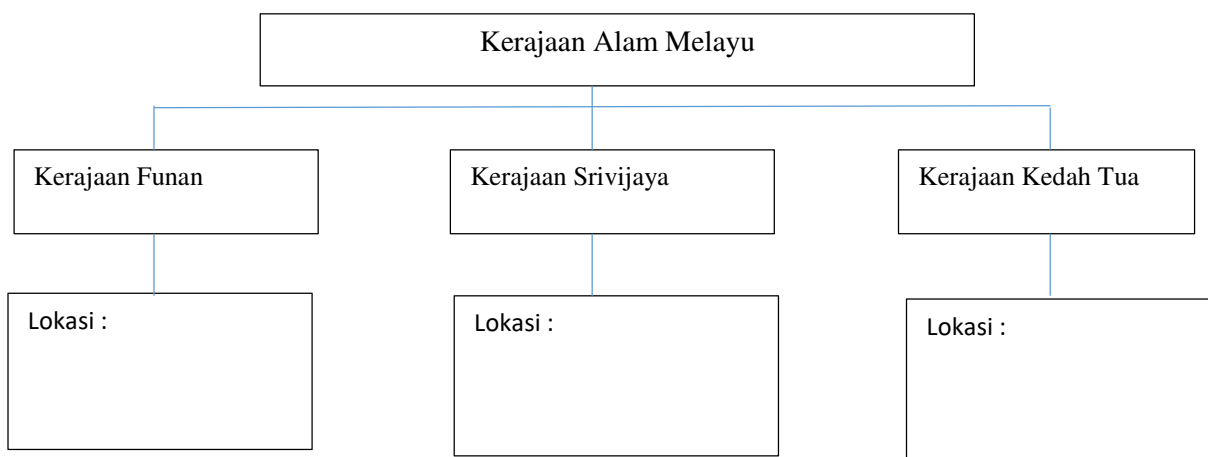
[3 markah]

(b) Berikan 4 faktor kemajuan kerajaan Alam Melayu.

[4 markah]

RANCANGAN PENGAJARAN HARIAN				
SUBJEK : GEOGRAFI				
TINGKATAN			KELAS	
TARIKH		MINGGU	MASA	
TEMPAT			KEHADIRAN	
TEMA/TOPIK/ BIDANG PEMBELAJARAN	5.0 ISU DAN PENGURUSAN ALAM SEKITAR			
STANDARD KANDUNGAN	5.1 PEMANASAN GLOBAL			
STANDARD PEMBELAJARAN	5.1.5 Menilai kesan pemanasan global 5.1.6 Membahaskan langkah-langkah mengurangkan pemanasan global			
OBJEKTIF PEMBELAJARAN/ KRITERIA KEJAYAAN	Pada akhir pengajaran dan pembelajaran, pelajar boleh : 1. Menjelaskan 4 kesan pemanasan global berserta contoh kawasan/fenomena/kes. 2. Mencadangkan idea kreatif bagi mengurangkan kesan pemanasan global.			

LANGKAH-LANGKAH	AKTIVITI PENGAJARAN & PEMBELAJARAN	PENTAKSIRAN FORMATIF	PEMBEZAAN
PENGLIBATAN	1. Pelajar dipilih untuk ke hadapan dan memasukkan ais ke dalam cawan yang berisi air kopi O panas yang hampir penuh. 2. Guru bertanyakan soalan kepada pelajar tentang apa yang berlaku. Pelajar diminta mengaitkan aktiviti dengan topik yang akan dipelajari. ATAU 1. Guru menggunakan Aplikasi Google Earth dan iNaturalist untuk membolehkan pelajar melihat keadaan kutub yang sebenar secara maya.	**Soalan berdasarkan fakta :** 1. Apakah yang menyebabkan ais di dalam cawan mencair? 2. Bolehkan aras air laut meningkat?	
PENEROKAAN	3. Guru membahagikan pelajar kepada 4 kumpulan. Setiap kumpulan ditugaskan untuk mencari maklumat berkaitan satu (1) kesan pemanasan global dan mencadangkan sekurang-kurangnya satu (1) langkah mengurangkan pemanasan global. Setiap kumpulan memilih 1 daripada 4 langkah-langkah		Pembezaan dari segi Kandungan iaitu 4 kesan pemanasan global: Kump. 1- Peningkatan aras laut Kump. 2 - Kemerosotan sumber makanan

	mengurangkan kesan pemanasan global: 1. Amalan 5R 2. Kerjasama antarabangsa 3. Penggunaan Tenaga Mesra Alam 4. Penguatkuasaan Undang-undang dan Pendidikan Alam Sekitar		Kump. 3 – Gangguan cuaca Kump. 4 – Masalah kesihatan
PENERANGAN	4. Pelajar membentangkan hasil perbincangan kumpulan mengikut kepelbagaian kecerdasan. 5. Pelajar lain memberikan komen atau penambahbaikan terhadap persembahan kumpulan tersebut.	Guru menggunakan Rubriks untuk menilai pembentangan. (**Rujuk Lampiran 1**) **Soalan berdasarkan fakta :** *1. Apakah 4 kesan pemanasan global?* 2. Apakah risiko penyakit yang wujud akibat pemanasan global? 3. Apakah contoh tenaga mesra alam? **Soalan berdasarkan konsep** 5. Bagaimanakah peningkatan aras air laut terjadi? 6. Bagaimanakah suhu dunia yang meningkat mempengaruhi kemerosotan makanan? 7. Apakah aktiviti yang boleh dilaksanakan di sekolah agar pelajar turut dilibatkan dalam usaha mengurangkan pemanasan global?	Pembezaan dari segi Proses. Pembentangan melalui kecerdasan pelbagai (mulitiple intelligences) 1. Verbal linguistic Contoh ; sajak atau pantun 2. Visual-spatial Contoh ; komik atau Powerpoint 3. Musical-rhythm Contoh; parody/lagu kanak-kanak 4.Bodily-kinesthetic Contoh ; Cheer/lakonan
PENGEMBANGAN	6. Guru menunjukkan slaid litupan ais yang mengecil setiap tahun. Pelajar bersoal jawab berkaitan fenomena tersebut. (Rujuk Lampiran 2 Shrinking Ice Caps) 7. Pelajar menjawab soalan (yang bertanda bintang *) menggunakan kaedah *"Post It" Notes* (Nota Catatan). Pelajar bertukar Nota Catatan bersama rakan yang lain untuk tujuan semakan.	**Soalan berdasarkan perbahasan** *2.Pada pendapat anda, adakah pencairan ais di Kutub Utara boleh meningkatkan aras laut Selat Melaka?*	
PENILAIAN	Pelajar diberikan sekeping *"Quadrant Map"* untuk mencadangkan idea bagi mengurangkan kesan pemanasan global. Idea yang terbaik ditulis di bahagian tengah *Quadrant Map*. (Lihat Lampiran 3)		

PENUTUP/ RUMUSAN	Guru meminta pelajar membayangkan diri mereka seperti seekor penguin keseorangan di atas ketulan ais kecil dikelilingi lautan. Beberapa orang pelajar diminta menyatakan ekspresi mereka. Melalui ekspresi ini, pelajar dapat menyemai perasaan tanggungjawab dan cinta akan alam sekitar. (Kaedah *I See, I Think, I Wonder*) 		
ELEMEN MERENTAS KURIKULUM (EMK)	Teknologi maklumat dan komunikasi Kelestarian Alam Sekitar Pembelajaran berasaskan inkuiri		
NILAI / SIKAP	Kerjasama berpasukan, yakin diri, bertanggungjawab		
STRATEGI	Berpusatkan pelajar Pembelajaran secara koperatif Pembelajaran berasaskan inkuiri:Penglibatan		
PEMBELAJARAN ABAD KE-21	Kecerdasan Pelbagai *Post It Notes* *Quadrant Map* *I See, I Think, I Wonder*		
BAHAN BANTU BELAJAR/ SUMBER/ RUJUKAN	1. Cawan, Ais, Air kopi O panas, buku Teks, buku kerja, LCD projektor 2. Aplikasi Google Maps https://www.google.com/earth/ 3. Aplikasi iNaturalist		
REFLEKSI	Penggunaan Google Map dan Aplikasi iNaturalist sangat menarik kerana pelajar seolah-olah mengalami sendiri suasana berada di kutub utara. Pengecilan saiz aisberg dan saiz litupan ais yang menjadi habitat beruang kutub boleh memberi kesedaran akan kesan langsung pemanasan global terhadap flora dan fauna. Penggunaan Quadrant Map menjadi aktiviti yang terbaik dalam usaha memupuk keterlibatan semua pelajar. Pelajar yang kurang aktif dan berciri intrapersonal boleh menjadikan aktiviti ini sebagai ruang untuk mereka mencurahkan idea.		

	Aktiviti berpusatkan pelajar yang dijalankan ini amat memerlukan pemantauan dan ketetapatan masa. Guru/Saya bertegas dalam kawalan masa agar semua aktiviti dapat digerakkan secara efisyen.
CATATAN	

Lampiran 1

KRITERIA PENILAIAN	4-5 Markah	2-3 Markah	1 Markah
1.Keaslian & Konsep	• Menunjukkan keaslian idea • Bercirikan konsep pemanasan global	• Sederhana dan hampir sama dengan idea yang dilihat • Kurang berkonsepkan pemanasan global	• Sama sahaja dengan idea biasa. • Tiada berkonsepkan pemanasan global
2. Kreativiti	Sangat kreatif dari segi persembahan dan menarik	Kurang kreatif dan kurang menarik	Tiada kreativiti dan tidak menarik
3. Kerjasama	Semua ahli bekerjasama	Sebahagian ahli tidak memainkan peranan	Hanya dilaksanakann oleh seorang ahli sahaja

Lampiran 2

SHRINKING ICE CAPS

Perennial ice cover — 1980 — 2000 — Alaska (US), North-West Passage, Northern Sea Route, Canada, Greenland (Denmark), 2011, Russia, UK

CryoSat-2 — Radar altimeter — Draft — Not in scale

The Arctic sea ice cover reaches its minimum in September. The remaining ice is called the perennial ice cover. CryoSat determines variations in its thickness so total ice volume can be worked out

SOURCES: ESA, NSIDC BIST

Lampiran 3

Quadrant Map – Quadrant Activity
(Aktiviti Berempat)

RANCANGAN PENGAJARAN HARIAN			
PENDIDIKAN ISLAM			
TINGKATAN		**TEMPAT**	
TARIKH/ HARI		**MASA**	
BIDANG/ TEMA	AKIDAH / KETAATAN MALAIKAT		
STANDARD KANDUNGAN	3.6 Merumuskan keimanan kepada malaikat serta mengamalkannya secara beradab dan istiqamah.		
STANDARD PEMBELAJARAN	3.6.1 Menyatakan maksud beriman kepada malaikat 3.6.2 Menyatakan dalil naqli kewajipan beriman kepada malaikat. 3.6.3 Menyatakan nama-nama malaikat beserta tugas. 3.6.4 Menerangkan perbezaan malaikat berbanding manusia. 3.6.5 Menghuraikan hikmah beriman kepada malaikat dan menghubungkaitkan dengan kehidupan. 3.6.6 Meyakini dan menghayati kewujudan malaikat dengan melakukan kebaikan dan menjauhi kemungkaran secara beradab dan istiqamah.		
OBJEKTIF PEMBELAJARAN	Pada akhir pengajaran dan pembelajaran, pelajar dapat : i. Menyebut maksud beriman kepada malaikat ii. Menyatakan **SATU** dalil naqli kewajipan beriman kepada malaikat. iii. Menyenaraikan **10** nama malaikat beserta tugas. iv. Menerangkan **3** perbezaan malaikat berbanding dengan manusia. v. Menjelaskan **3** hikmah beriman kepada malaikat dan menghubungkaitkan dengan kehidupan. vi. Menulis **3** penambahbaikan yang akan dilaksanakan dalam kehidupan.		
LANGKAH PENGAJARAN	**AKTIVITI PENGAJARAN & PEMBELAJARAN**	**PENTAKSIRAN FORMATIF**	**PEMBEZAAN**
PELIBATAN **(set induksi)** **5 minit**	Pelajar diperdengarkan nasyid kumpulan Raihan berkaitan nama-nama malaikat beserta tugas. Link:https://www.youtube.com/watch?v=Ei7rhbsOmEo	Sumbang saran Nama malaikat dan tugas yang mereka tahu. Kenapa Allah menciptakan malaikat?	

PENEROKAAN **(10 minit)**	1.Pelajar dibahagikan kepada empat kumpulan - Kumpulan 1 – Apakah maksud beriman kepada malaikat dan nyatakan dalil naqli mengenainya . - Kumpulan 2- Apakah nama malaikat yang wajib kita tahu beserta peranannya. - Kumpulan 3- Terangkan perbezaan malaikat dengan manusia. - Kumpulan 4- Apakah kesan beriman kepada malaikat dalam kehidupan manusia. Pelajar dikehendaki menyelesaikan tugasan menggunakan peta i-think yang sesuai. 2. Murid diberikan masa untuk berbincang. Hasil perbincangan tersebut dicatat dalam bentuk peta pemikiran pada kertas sebak dan ditampal di sekeliling kelas.	Peta pemikiran dan pembentangan.	Pelajar dibahagikan dalam kumpulan mengikut tahap penguasaan pelajar. Kumpl 1: pelajar lemah Kumpl 2: pelajar sederhana Kumpl 3: pelajar sederhana Kumpl 4: pelajar cemerlang.
PENERANGAN **(25 minit)**	Aktiviti Three Stray One Stay dilaksanakan. -Guru mengukuhkan kefahaman pelajar berkaitan empat persoalan di atas.	Three Stray One Stay Soal jawab lisan Contoh soalan: 1. Kenapa sebagai umat Islam kita wajib mengetahui dalil naqli kewujudan malaikat? 2. Mengapakah manusia perlu mengetahui nama-nama malaikat? 3. Mengapakah kita perlu mnegetahui sifat-sifat malaikat? - pembentang untuk aktiviti ini akan dinilai oleh kumpulan lain. (rujuk borang rubrik pemarkahan)	

PENGEMBANGAN (10 minit)	*Beriman kepada malaikat dapat mengawal anda menggunakan telefon pintar dengan bijak.* Huraikan hujah anda mengenai pernyataan di atas.	Think-Pair-Share Pelajar menyediakan hujah jawapan. Pelajar disoal secara rawak.	Menggunakan kaedah mentoring. - Pelajar lemah dipasangkan dengan pelajar cemerlang.
PENILAIAN	Guru mengedarkan lembaran kerja kepada pelajar (rujuk lampiran).		
PENUTUP/ **RUMUSAN**	Guru menghuraikan hikmah beriman kepada malaikat dan menasihati pelajar supaya sentiasa berbuat baik dan menjauhi kemungkaran		
ELEMEN MERENTAS KURIKULUM (EMK)	-Bahasa,Nilai murni,Kreativiti & Inovasi		
NILAI/ SIKAP	-Kerjasama,Kejujuran,Rasional,Kerajinan,Keberanian dan Hormat menghormati		
STRATEGI	-Kontekstual, Inkuiri, KBAT,Penyelesaian masalah		
PEMBELAJARAN ABAD KE-21	Sumbang saran, Three stray one stay, Think-pair-share		
BAHAN BANTU BELAJAR/ **SUMBER/ RUJUKAN**	Kertas Sebak Video Buku teks Laman web link : https://www.youtube.com/watch?v=Ei7rhbsOmEo http://saifulislam.com/?s=bani+adam Bani Adam: Antara khalifah dan makhluk perosak serta penumpah darah		
REFLEKSI	1.Pelajar dapat memindahkan maklumat dari bentuk esei kepada bentuk peta i-think dengan baik serta berjaya menyampaikan maklumat kepada rakan-rakannya dengan berani dan kreatif. 2.Pelajar perlu meningkatkan kepekaan terhadap dalil naqli kewajipan sesuatu perkara. 3.Pelajar juga perlu meningkatkan kemahiran berkomunikasi serta pengurusan masa yang baik.		
CATATAN			

LAMPIRAN

Nama:……………………………………………………………….

Kelas :……………………………………………………………

Soalan latihan bab Beriman Kepada malaikat

A.Tandakan (/) pada pernyataan yang betul dan (X) pada pernyataan yang salah:

1. Malaikat dijadikan daripada cahaya ( )

2. Malaikat jibrail menyampaikan wahyu dan meniup sangkakala ( )

3. Malaikat Rakib mencatat amalan baik dan jahat manusia ( )

4. Semua malaikat akan bertasbih kepada Allah dan menanggung arasy ( )

5. Perbezaan antara malaikat dan manusia dari aspek sifat ialah jantina ( )

6. Dalil naqli tentang kewajipan beriman kepada malaikat adalah dalam ( ) surah al-Baqarah ayat 3

7. Umat Islam tidak akan merasa bahagia sekiranya tidak beriman ( ) kepada malaikat

B. Tulis 3 perubahan positif yang ingin anda lakukan setelah mempelajari tajuk ini:

1. _____

2. _____

3._____

RUBRIK PEMARKAHAN BAGI PEMBENTANGAN
AKTIVITI THREE STRAY ONE STAY

Bil	Perkara	Rubrik	Markah
1.	**Penyampaian** - **Suara** - **Bahasa**	**1-3: Lemah** **4-7: Sederhana** **8-10: Cemerlang**	**/10**
2.	**Isi kandungan/ Penguasaan sub topik**	**1-3: Lemah** **4-7: Sederhana** **8-10: Cemerlang**	**/10**
3.	**Kreativiti** - **Gaya**	**1-3: Lemah** **4-7: Sederhana** **8-10: Cemerlang**	**/10**
	JUMLAH		

RANCANGAN PENGAJARAN HARIAN PENDIDIKAN MORAL					
TINGKATAN	2			KELAS	
TARIKH		MINGGU		MASA	
TEMPAT				KEHADIRAN	
TEMA/TOPIK/ BIDANG PELAJARAN	**BIDANG 3 : HUBUNGAN ANTARA DIRI, KOMUNITI & MASYARAKAT**				
STANDARD KANDUNGAN	**3.4 Lindungi Alam Sekitar**				
STANDARD PEMBELAJARAN	3.4.4 Mengkaji kesan aktiviti manusia terhadap keseimbangan alam sekitar 3.4.5 Mengekspresikan perasaan apabila melibatkan diri dalam aktiviti melindungi alam sekitar. 3.4.6 Mengamalkan tingkah laku ke arah melindungi alam sekitar				
OBJEKTIF PEMBELAJARAN/ KRITERIA KEJAYAAN	**Pada akhir pengajaran dan pembelajaran, pelajar dapat :** i. Menyenaraikan tiga kesan aktiviti manusia terhadap alam sekitar. ii. Menunjukkan perasaan yang positif apabila melibatkan diri dalam aktiviti alam sekitar melalui sikap yang positif iii. Menjadikan sikap menjaga alam sekitar sebagai amalan dalam kehidupan seharian.				
LANGKAH- LANGKAH	AKTIVITI PENGAJARAN & PEMBELAJARAN	PENTAKSIRAN FORMATIF		PEMBEZAAN	
PENGLIBATAN	- Guru menunjukkan gambar pusat pengumpulan sampah di kawasan maktab. - Guru bersoal jawab dengan pelajar. **Contoh soalan:** i. Adakah tempat ini terurus? ii. Apakah perasaan anda apabila melihat keadaan longgokan sampah sebegini? - Guru mengaitkan situasi dengan pengajaran hari ini				
PENEROKAAN	- Pelajar dibahagikan kepada 3 kumpulan - Guru mengedarkan 3 keping gambar yang menunjukkan gangguan manusia terhadap alam sekitar.			3 kumpulan pelajar : • **Kumpulan A**: Aktiviti pelepasan asap kilang (Lampiran 1) • **Kumpulan B:** Pembakaran terbuka (Lampiran 2) • **Kumpulan C:** Pencemaran (Lampiran 3)	
PENGEMBANGAN	- Berdasarkan gambar yang diberikan Kumpulan A diminta untuk menyatakan tiga kesan aktiviti tersebut dalam bentuk peta minda.**(teknik Peta Minda/*Mind Mapping*)**	Peta minda		Pembezaan aspek KANDUNGAN iaitu: - Kesan pencemaran udara	

	Rujuk laman web: **https://ms.wikipedia.org.wiki/ Pencemaran_udara** - Setiap ahli Kumpulan B diminta untuk menulis aduan permasalahan. Aduan tersebut dikumpulkan dan kumpulan tersebut dikehendaki menulis surat rasmi kepada Jabatan Alam Sekitar berkaitan dengan isu yang berlaku (**teknik *Jot Thoughts***) Tonton Youtube: **Video Pembakaran Terbuka di Ayer Tawar Perak** Atau **Video Pembakaran Terbuka Haja Faizal** - Semua ahli kumulan C membincangkan kemungkinan soalan-soalan yang akan diajukan oleh kumpulan lain. Seorang wakil kumpulan tampil di hadapan kelas dan menjawab soalan (**teknik Kerusi Panas/ *Hot Seat***) Tonton Youtube: **Video Pencemaran Air email rere**	Jot thoughts Kerusi panas	- Ekspresi perasaan/ kesan pembakaran terbuka - Langkah mengangani pencemaran sungai Pembezaan aspek PRODUK untuk pembentangan. Tugasan diberikan berdasarkan kecerdasan pelbagai iaitu: 1. Peta Minda 2. *Jot Thoughts* 3. Kerusi Panas
PENERANGAN	- Wakil setiap kumpulan akan membentangkan hasil tugasan . - Semasa sesi pembentangan, kumpulan yang mendengar perlu bertanyakan soalan.	**<u>Soalan Berdasarkan Fakta:</u>** **Teknik tiga serangkai A-B-C** 1.Agensi manakah yang terlibat dalam penguatkuasaan akta berkaitan alam sekitar? 2. Berikan nama lengkap akta berkaitan alam sekitar 3. Apakah peranan PERHILITAN? **<u>Soalan Berdasarkan Konsep:</u>** 1. Terangkan kesan pencemaran sungai terhadap hidupan akuatik. **<u>Soalan Berdasarkan Perdebatan:</u>** 1. Sejauhmanakah pelajar di sekolah ini mengamalkan sikap menjaga alam sekitar?	

PENILAIAN	Guru membuat pentaksiran formatif ke atas pembentangan setiap kumpulan.	Rubrik pemarkahan pembentangan (rujuk Lampiran 5)	
PENUTUP/ **RUMUSAN**	- Setiap pelajar diminta menulis SATU perasaan apabila melibatkan diri dalam aktiviti pemeliharaan alam seperti Sambutan Hari Bumi yang telah mereka sertai. (lampiran 4) - Guru membuat rumusan pengajaran pada hari ini.	**Teknik one sentence summary** **Soalan Berdasarkan Perdebatan:** 1. Adakah wajar seseorang pelajar melibatkan diri dalam aktiviti penjagaan alam sekitar dalam komuniti masyarakat tempat tinggalnya? Beri alasan anda.	
ELEMEN MERENTAS KURIKULUM (EMK)	Kelestarian alam sekitar, Nilai murni, Kreativiti dan inovasi, Bahasa		
NILAI/ SIKAP	Kasih saying, Bertanggungjawab, Rasional, Kerjasama, Kerajinan		
STRATEGI	Konstruktivisme, Kecerdasan pelbagai, Kontekstual		
PEMBELAJARAN ABAD KE -21	Peta minda/ *Mind Mapping,* Catatan fikiran/ *Jot Thought,* Kerusi Panas/ *Hot Seat,* Tiga serangkai A-B-C, *One Sentence Summary*		
BAHAN BANTU BELAJAR/SUMBER RUJUKAN	Lampiran 1, Lampiran2, Lampiran 3, Lampiran 4, Lampiran 5 Laman web: ***https://ms.wikipedia.org.wiki/Pencemaran_udara*** Youtube: ***Video Pembakaran Terbuka di Ayer Tawar Perak*** Atau ***Video Pembakaran Terbuka Haja Faizal*** Youtube: ***Video Pencemaran Air email rere***		
REFLEKSI	*Aktiviti pelajar dibahagikan mengikut kecenderungan pelbagai seperti visual ruang, verbal lingustik, kinestetik dan Naturalis untuk menyelesaikan tugasan yang diberikan oleh guru. Aktiviti ini sangat bagus kerana ramai pelajar dapat menonjolkan bakat dan minat masing-masing yang berbeza-beza.* *Setiap kumpulan diberikan 10-15 minit untuk menyelesaikan tugasan tersebut. Tempoh yang agak singkat namun mencukupi. Saya perlu bijak mengawal masa.*		

	Penekanan kepada setiap kumpulan adalah untuk mencari maklumat daripada sumber yang sahih dan tepat.Ini penting untuk mengelakkan situasi pelajar tidak aktif (sleeping partner) *PdP minggu ini diakhiri dengan pelajar-pelajar menyatakan pendapat mereka serta mengekspresikan perasaan mereka dalam aspek pemeliharaan alam sekitar secara bertulis. Cara ini dilaksanakan supaya mereka membiasakan diri mereka menyatakan pendapat mereka dengan betul dan menggunakan bahasa yang betul.Teknik ini sangat menarik minat pelajar dan wajar diteruskan.*
CATATAN	Guru memberikan tugasan berkumpulan iaitu Projek Sudut Lestari dan Sudut Kitar Semula. Pelajar perlu menyiapkan tugasan dalam tempoh dua minggu. *Tugasan dinilai untuk memenuhi **SP 3.4.6**

Lampiran 1

Lampiran 2

Lampiran 3

Lampiran 4

One Sentence Summary
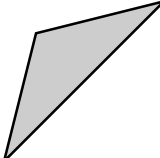
Nama :

Kelas :

Apakah yang anda faham melalui topik yang dibincangkan pada hari ini?

_____
_____
_____

Nyatakan perasaan anda sewaktu menyertai aktiviti Sambutan Hari Bumi?

_____
_____
_____

Nyatakan cadangan untuk penambahbaikan topik yang anda pelajari pada hari ini.

_____
_____
_____

Lampiran 5

Rubrik Pemarkahan

	Markah
Nama kumpulan:	keseluruhan:

KEMAHIRAN (10 MARKAH)		
1-3 markah	**4-6 markah**	**7-10 markah**
Sangat lemah dalam meneroka dan banyak kelemahan dalam aspek tertentu.	Kurang kemahiran dalam meneroka dan mempunyai kelemahan dalam aspek tertentu.	Berkemahiran dalam meneroka dan mampu menghasilkan hasil kerja yang kreatif dan tepat.

KEKEMASAN (10 MARKAH)		
1-3 markah	**4-6 markah**	**7-10 markah**
Hasil karya yang kurang berkualiti dan bermutu	Terdapat beberapa kelemahan yang perlu diberi perhatian	Hasil karya sangat kemas dan berkualiti dalam semua aspek

SIKAP, SAHSIAH DAN KERJASAMA(10 MARKAH)		
1-3 markah	**4-6 markah**	**7-10 markah**
Tidak menepati ciri sikap, sahsiah dan kerjasama yang baik. Seorang atau dua ahli sahaja yang memberi komitmen	Sikap, sahsiah dan kerjasama yang masih boleh dipupuk dan diberi perhatian. Seorang atau dua ahli sahaja yang tidak komited.	Mempunyai sikap, sahsiah dan kerjasama yang sangat baik Semua ahli memupuk kerjasama yang mantap dan jitu

RANCANGAN PENGAJARAN HARIAN				
SUBJEK : BAHASA ARAB				
TINGKATAN	2		**KELAS**	
TARIKH		**MINGGU**	**MASA**	
TEMPAT			**KEHADIRAN**	
TEMA/TOPIK/ BIDANG PEMBELAJARAN	الرحلة إلى حديقة الحيوانات (Lawatan ke zoo)			
STANDARD KANDUNGAN	1.1 Mendengar perkataan dan memberi maklum balas mengikut situasi. 2.1 Menyebut perkataan dengan sebutan arab yang fasih. 3.1 Membaca perkataan dengan betul dan memahami cara penggunaanya. 4.1 Menulis perkataan dengan betul.			
STANDARD PEMBELAJARAN	1.1.4 Mendengar perkataan dan memberi maknanya. 2.1.1 Menuturkan perkataan dengan sebutan yang betul mengikut sifat huruf dan makhrajnya. 3.1.2 Membaca perkataan dengan intonasi yang betul. 4.1.1 Menggunakan kaedah-kaedah penulisan asas dalam penulisan perkataan.			
OBJEKTIF PEMBELAJARAN / KRITERIA KEJAYAAN	Pada akhir pengajaran dan pembelajaran, pelajar dapat : 1) Memadankan perkataan yang didengar dan ditulis. 2) Menuturkan dan membaca perkataan dengan sebutan yang betul 3) Mendengar, menuturkan dan menulis perkataan. 4) Memberi makna perkataan yang dipelajari. 5) Menerangkan tiga ciri-ciri haiwan yang telah dipelajari.			
LANGKAH-LANGKAH	**AKTIVITI PENGAJARAN & PEMBELAJARAN**	**PENTAKSIRAN FORMATIF**		**PEMBEZAAN**
PENGLIBATAN **(5 minit)** **PENEROKAAN** **(10 minit)**	SET INDUKSI Guru memperdengarkan melalui rakaman video bunyi binatang seperti lembu, ayam dan itik. Soalan yang ditanya : Siapakah saya? Di manakah saya tinggal? Pelajar menyatakan nama haiwan-haiwan tersebut dan habitatnya. Pelajar menonton video tentang haiwan-haiwan di dalam zoo. Kemudian pelajar mengeluarkan nama-nama haiwan yang terdapat di dalam video tersebut. Setiap pelajar perlu mendapatkan sekurang-kurangnya 5 nama haiwan. Pelajar akan merujuk kamus untuk mendapatkan nama-nama binatang di dalam zoo	Menyenaraikan 5 nama haiwan		

	dalam bahasa arab. Pelajar menulis nama haiwan tersebut di atas kertas kemudian 3 orang pelajar akan dipilih untuk membacakannya di hadapan kelas.		
	Pelajar dibahagikan kepada 5 kumpulan. Setiap kumpulan akan diberikan 2 perkataan (nama binatang) yang diambil daripada buku teks. Pelajar pertama dan kedua akan melakonkan perkataan tersebut. Pelajar yang lain dalam kumpulan tersebut akan menyebut dan menulis perkataan tersebut. *(role play)*	Menyebut dan menulis nama haiwan tersebut	
PENERANGAN (20 minit)	Wakil daripada setiap kumpulan akan ke hadapan kelas dan melakonkan perkataan yang diberikan. Pelajar lain akan menyebutkan perkataan tersebut kemudian menulisnya di papan putih.	*Role play* dalam kumpulan kecil	Pelajar membuat satu kumpulan kecil. Setiap pelajar diberi satu perkataan. Pelajar yang pertama akan menyebutkan satu perkataan yang diterima. Pelajar kedua akan mengulang kembali perkataan yang pertama dan menyebut perkataan yang diterimanya. Setelah selesai pada pelajar yang terakhir, semua pelajar perlu menyebut kembali semua perkataan yang didengar. (Perkataan diambil daripada buku teks).
	Guru menunjukkan gambar (*flash card*) beberapa haiwan dan meminta pelajar menyebutkan nama haiwan tersebut. Kemudian guru menunjukkan gambar nama haiwan tersebut dan meminta pelajar membacanya. (*using large picture cards*)		
	Guru menerangkan jenis kategori haiwan liar dan jinak berdasarkan nama-nama haiwan yang telah dipelajari menggunakan isyarat tangan. (kanan : jinak, kiri : liar). Guru mengangkat tangan kanan dan kiri secara berulang-ulang sehingga pelajar dapat menyebut dan mengulangi jenis kategori binatang.	Picture Cards (Kad Imbas)	
	Guru menguji pelajar dengan menyebut perkataan nama-nama haiwan dan pelajar mengangkat tangan kanan atau kiri untuk menyatakan jenis haiwan tersebut.		
PENGEMBANGAN (10 minit)	Guru melekatkan perkataan sifat haiwan di papan putih dan pelajar menampal nama-nama haiwan mengikut sifatnya.		

	Guru membuat teka-teki berkenaan haiwan dan meminta pelajar menjawab teka-teki tersebut. Soalan : 1. Siapakah saya? 2. Adakah saya jinak atau liar? Guru meminta pelajar menyelesaikan teka silang kata yang disediakan. Pelajar menyenaraikan dan menulis kembali perkataan-perkataan yang telah dipelajari dalam buku kerja.	Pelajar mengklasifikasikan haiwan mengikut jenis Teka silang kata	
PENILAIAN **10 minit**			
PENUTUP/ **RUMUSAN**			Pelajar yang lemah diberi huruf-huruf hijaiyah untuk disusun membentuk nama haiwan.
ELEMEN MERENTAS KURIKULUM (EMK)	BAHASA / KELESTARIAN ALAM SEKITAR / SAINS DAN TEKNOLOGI		
NILAI / SIKAP	KERJASAMA, BERANI,KREATIF		
STRATEGI	KONTEKSTUAL / KONSTRUKTIVISME		
PEMBELAJARAN ABAD KE-21	ROLE PLAY / USING LARGE PICTURE CARDS / SIMULASI		

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BAHAN BANTU BELAJAR/ SUMBER/ RUJUKAN	BUKU TEKS BAHASA ARAB LEMBARAN KERJA KAD IMBAS
REFLEKSI	*Contoh refleksi* 1) Topik ini berjaya menarik minat pelajar-pelajar kerana melibatkan pelbagai bunyi haiwan. 2) Video klip lagu yang ditayangkan perlu diulang sebanyak 2 atau 3 kali kerana lagu tersebut rancak yang memerlukan pelajar fokus. 3) Pelajar hanya dapat mengeluarkan beberapa nama haiwan daripada video yang ditonton. Namun, kaedah ini dapat menambahkan kosa kata pelajar. 4) Antara kelemahan pelajar adalah gagal menyebutkan 2 perkataan dengan baik mengikut sebutan arab iaitu : السلحفاة dan صقر. Guru perlu mengulangi sebutan perkataan tersebut di hadapan pelajar. 5) Aktiviti melakonkan watak haiwan dapat menarik minat pelajar dan menjadikan kelas bertambah ceria. Namun, beberapa pelajar kurang berkeyakinan dan malu untuk melakonkan watak haiwan di hadapan kelas. Guru perlu melakonkan watak tersebut sambil diikuti oleh pelajar. 6) Pelajar dapat mengingati perkataan المفترسة dan الأليفة dengan mudah kerana terdapat gerakan badan pada aktiviti tersebut. 7) Pelajar-pelajar aktif dan memberikan kerjasama dalam menyelesaikan teka-teki dan teka silang kata. Aktiviti ini boleh dilakukan semula pada pembelajaran akan datang. Aktiviti ini menguji minda dan tahap ingatan pelajar.
CATATAN	Pelajar-pelajar diberi kerja rumah (halaman 31 buku latihan). Perlu dihantar sebelum 3/7/2018. Semua pelajar hadir.

Lampiran

التمساح

الأسد

الفيل

النمر

الزرافة

القردة

الحية

الحصان

الببغاء

الغزال

الأليف	المفترس
الغزال	الحية
النمر	الحصان
التمساح	القردة

Buat jahat selalu dikecam,
Buat baik selalu dipuja,
Binatang ini giginya tajam,
Kalau berehat mulut ternganga,

(التمساح)

Manis sungguh buah melaka,
Dibuat oleh si anak dara,
Lehernya panjang tidak terkira,
Tapi makan pucuk pokok sahaja.

(الزرافة)

Pak Leman seorang nelayan,
pergi ke laut setiap pagi,
apakah binatang harap nyatakan,
tiada kaki boleh berlari.

(الحية)

عمودي :

1) أتسلق الأشجار وأنا آكل الموز. من أنا ؟

2) الحية حيوان _____ .

3) المشتركة ترسم الغزال _____ .

4) أعيش في الغابة وأنا آكل اللحم . من أنا ؟

5) ما هو ؟

سطحي :

1) ما هي أطول الحيوان في العالم ؟

2) مالك الغابة

3) أسير على الحجر وأنا آكل اللحم. من أنا؟

4) ما هو ؟

PEMBEZAAN

ي	ة	ا	ح	ل

= _____

ب	ء	ل	ا	ب	غ	ا

= _____

RANCANGAN PENGAJARAN HARIAN			
SUBJEK : REKA BENTUK DAN TEKNOLOGI			
TINGKATAN	DUA	**KELAS**	
TARIKH		**MINGGU**	**MASA**	
TEMPAT	BENGKEL RBT / MAKMAL KOMPUTER	**KEHADIRAN**	
TEMA/TOPIK/ BIDANG PEMBELAJARAN	APLIKASI TEKNOLOGI / REKA BENTUK DAN TEKNOLOGI		
STANDARD KANDUNGAN	2.5 Reka Bentuk Akuaponik		
STANDARD PEMBELAJARAN	2.5.1 Menyatakan maksud dan menerangkan reka bentuk sistem akuaponik. 2.5.2 Menjelaskan kelebihan reka bentuk akuaponik. 2.5.3 Mengenal pasti komponen akuaponik. 2.5.4 Melakar reka bentuk sistem akuaponik bermaklumat.		
KRITERIA KEJAYAAN	Pada akhir pengajaran dan pembelajaran, pelajar dapat : 1.Menyatakan maksud reka bentuk sistem akuaponik dengan betul. 2.Menerangkan 4 kelebihan reka bentuk sistem akuaponik dengan baik. 3. Menyenaraikan 4 komponen akuaponik dengan betul 4.Membuat 3 lakaran dan membina 1 model reka bentuk sistem akuaponik daripada lakaran terbaik.		

LANGKAH-LANGKAH	AKTIVITI PENGAJARAN & PEMBELAJARAN	PENTAKSIRAN FORMATIF	PEMBEZAAN
SET INDUKSI	Guru mengedarkan / menunjukkan bahan daripada majalah Pertanian atau Video tentang akuaponik / isu-isu luar. Pelbagai kaedah penanaman seperti akuaponik, hidroponik, fertigasi dan menggunakan media tanah.	Soal jawab : 1. Nyatakan punca-punca berlakunya pencemaran. 2. Nyatakan kaedah penanaman yang anda tahu.	

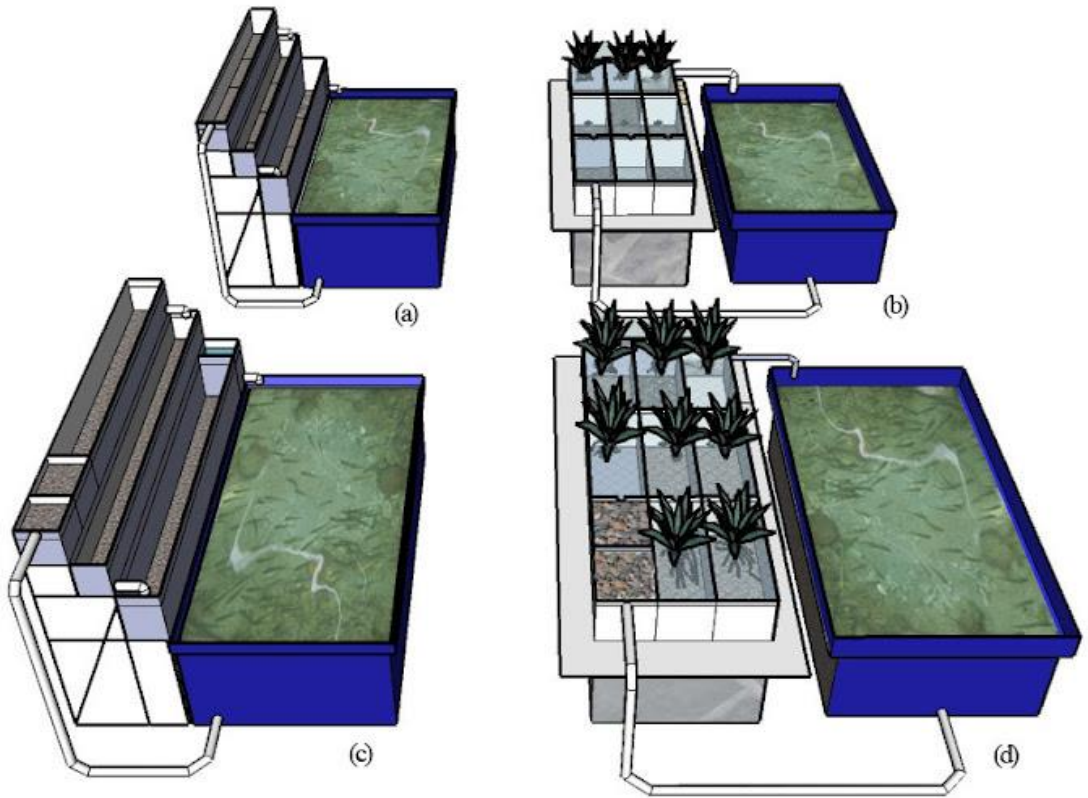|			
PELIBATAN/ **PENEROKAAN**	Secara berpasangan pelajar diberi tugasan Standard Pembelajaran yang berbeza. Pelajar membuat pembacaan, melayari internet, berbincang dan menyediakan bahan pembentangan. Selepas perbincangan dan perkongsian bahan antara kumpulan yg mempunyai tajuk sama, pelajar dikehendaki menyediakan bahan pembentangan mengikut kreativiti masing-masing. Bahan pembentangan yang disediakan mesti dihantar dalam galeri telegram dalam bentuk nota / peta buih / power point / video. Bahan pembentangan disediakan dalam bentuk nota / peta buih / power point / video. Pelajar menggunakan cara akrostik / akronim semasa menyediakan bahan pembentangan.	Pelajar menulis maklumat berkenaan hasil perbincangan yang dilakukan dalam lembaran kerja 1. Apakah pendapat anda tentang tanaman kaedah akuaponik? 2. Nyatakan 3 jenis reka bentuk model akuaponik. 3. Namakan 6 komponen akuaponik. 4. Nyatakan fungsi setiap komponen akuaponik. 5. Apakah perkara yang perlu ada pada lakaran? 6. Bagaimanakah langkah-langkah untuk membina model akuaponik? Pelajar menjawab soalan / melaksanakan amali / aktiviti Standard Pembelajaran (Aktiviti Standard Pembelajaran bersesuaian dengan pembentangan pelajar) Helaian latihan kepada pelajar dan perbincangan jawapan dilakukan selepas semua pelajar selesai menjawab	Guru memantau pelajar semasa sesi perbincangan maklumat. Kumpulan yang mengalami kesukaran untuk menyiapkan tugasan akan diminta menghantar seorang wakil ke kumpulan yang lain untuk mendapat maklumat dan idea bagi membantu kumpulannya menyiapkan tugasan. Pelajar yang kurang melibatkan diri semasa sesi perbincangan akan dibimbing oleh guru.
PENERANGAN, **PENGEMBANGAN**	Sesi pembentangan dilakukan secara undian pada kumpulan tajuk yang sama mengikut urutan standard pembelajaran. – 10 @15 minit Sesi soal jawab berlaku semasa pembentangan berlangsung dan guru akan membantu pelajar membuat peneguhan sekiranya perlu. Setiap kumpulan yg selesai membuat pembentangan dikehendaki menyediakan soalan atau tugasan dan diberikan kepada setiap pelajar untuk diselesaikan bagi memenuhi standard prestasi. Proses tersebut diulang sehingga semua kumpulan telah membuat pembentangan.		

PENILAIAN	Bahan pembentangan dan model terbaik dijadikan bahan galeri reka bentuk akuaponik ditempatkan dalam kelas dan bengkel RBT. Semua pelajar dikehendaki menghantar hasil lakaran dan model akuaponik berserta laporan lengkap untuk dinilai. Pelajar bersoal jawab untuk mendapatkan maklumat yang terperinci	Sesi perbincangan soalan / pernilaian hasil kerja pelajar. 1. Menggunakan borang penilaian dan pemarkahan model	
PENUTUP/ **RUMUSAN**	Guru membuat rumusan.		
ELEMEN MERENTAS KURIKULUM (EMK)	Kelestarian alam sekitar, Nilai murni, Sains dan teknologi, Keusahawanan, Teknologi maklumat dan komunikasi, Kelestarian global		
NILAI / SIKAP	Pemikir, Kerja sepasukan, Bersifat ingin tahu, Berprinsip, Bermaklumat, Penyayang		
STRATEGI	Pembelajaran berasaskan inkuiri, Penggunaan teknologi, Pembelajaran kendiri, Pembelajaran kolaboratif, Pembelajaran berasaskan projek, Pembelajaran penerokaan		
PEMBELAJARAN ABAD KE-21	Sumbang saran, Tinjauan, Persembahan, Klip video		
BAHAN BANTU BELAJAR/ **SUMBER/ RUJUKAN**	LCD/Power point, Buku teks, Buku rujukan, Modul, Carta/model, Bahan bercetak, Kertas sebak Youtube : **http://www.youtube.com/watch?v=jRwfYIpShWo**		
REFLEKSI	1. Penggunaan akronim / akrostik semasa penyediaan bahan pembentangan menjadikan bahan tersebut lebih tersusun dan memudahkan pelajar mengingat fakta. 2. Galeri maya yang disediakan melalui kumpulan Telegram memudahkan pelajar menghantar bahan pembentangan dan bahan tersebut mudah dicapai oleh semua ahli kelas. 3. Pelajar telah dapat mengenal pasti komponen akuaponik dengan baik. 4. Pelajar telah dapat melakar reka bentuk sistem akuaponik dengan baik. 5. Pelajar telah dapat menganalisis lakaran reka bentuk sistem akuaponik dengan betul.		
CATATAN			

Lampiran 1

PENERANGAN KITARAN AKUAPONIK

Gambar Akuaponik

(a)

(b)

(c)

(d)
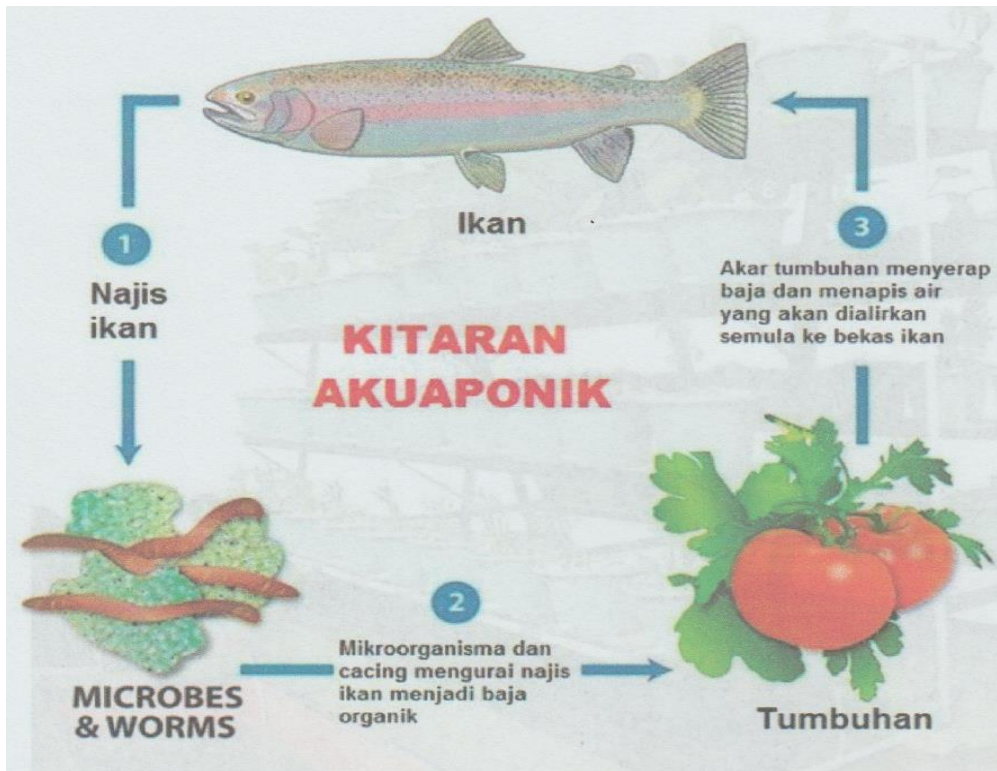
Lampiran 2

Bahan PBS

BAB 2.5
REKA BENTUK AKUAPONIK
TAHAP PENGUASAAN 1

Bagi mencapai Tahap Penguasaan 1, pelajar perlu :

   i   Menyatakan maksud reka bentuk sistem akuaponik

1.   Lengkapkan maksud reka bentuk sistem akuponik di bawah dengan maklumat berikut:- (aras rendah)

hidroponik	teknologi	satu
pertanian	akuakultur	pusingan

Akuaponik merupakan _ _ _ _1 _ _ _ _ _ _ _ _2_ _ _ _ yang menggabungkan _ _ _ _ _3 _ _ _ _ (aktiviti ternakan ikan) dengan aktiviti _ _ _ _4_ _ _ _ _ (menanam tanaman tanpa media tanah) dalam _ _ _ 5_ _ _ _ _ _6 _ _ _ air (circulation).

2.   Lengkapkan maksud reka bentuk sistem akuponik di bawah (aras sederhana)

Akuaponik merupakan T _ _ _ _ _ _ _ _ P _ _ _ _ _ _ _ _ yang menggabungkan A _ _ _ _ _ _ _ _ _ (aktiviti ternakan ikan) dengan aktiviti H _ _ _ _ _ _ _ _ _ (menanam tanaman tanpa media tanah) dalam S _ _ _ P _ _ _ _ _ _ _ air (circulation).

1.   Nyatakan maksud reka bentuk sistem akuaponik. (aras tinggi)

………

………

……………………………………………………………………………………………………….………

TAHAP PENGUASAAN 2

Padankan kelebihan reka bentuk akuaponik berdasarkan reka bentuk sistem akuaponik di bawah. (aras rendah)

Bagi mencapai Tahap Penguasaan 2, pelajar perlu :

    i   Menerangkan kelebihan reka bentuk sistem akuaponik

Reka Bentuk Sistem Akuaponik		Kelebihan
Raft		Air yang digunakan untuk mengairi tumbuhan adalah sangat sedikit
Ebb & Flow		Akar tanaman boleh menyerap nutrien organik di dalam air secara terus.
NFT		Biofilter (bio-penapis) berlaku dalam media penanaman dan dapat mengurangkan kesukaran dalam mereka bentuk system akuaponik

1. Beri satu kelebihan reka bentuk akuaponik berdasarkan reka bentuk sistem akuaponik di bawah.

Bil	Reka Bentuk Sistem Akuaponik	Kelebihan
1	Raft	
2	Ebb & Flow	
3	NFT	

TAHAP PENGUASAAN 3

Bagi mencapai Tahap Penguasaan 3, pelajar perlu :

   i   Membuat lakaran dan membina model reka bentuk sistem akuaponik

1. Lakarkan lakaran reka bentuk sistem akuaponik dengan menunjukkan komponen-komponen utama yang menjadi asas kepada pembinaan sistem tersebut

RANCANGAN PENGAJARAN HARIAN					
SUBJEK : PENDIDIKAN SENI VISUAL					
TINGKATAN	2			**KELAS**	
TARIKH		**MINGGU**	1	**MASA**	
TEMPAT	Persekitaran Maktab & Studio Senireka			**KEHADIRAN**	/25
TEMA/TOPIK/ BIDANG PEMBELAJARAN	Tajuk 5: Reka bentuk landskap				
STANDARD KANDUNGAN	5.1 Persepsi seni dalam reka bentuk landskap - Pemahaman terhadap reka bentuk landskap dalam bidang reka bentuk				

STANDARD PEMBELAJARAN	5.1 Memperihalkan sejarah perkembangan reka bentuk landskap
	 5.2 Menjelaskan prinsip reka bentuk landskap
	     i) Jenis Landskap
	       a. Landskap lembut *(softscape)*
	       b. Landskap kajur *(hardscape)*
	     ii) Peranan dan fungsi
	     iii) Prinsip dan elemen
	     iv) Konsep
	     v) Ergonomik				

OBJEKTIF PEMBELAJARAN/ KRITERIA KEJAYAAN	Pada akhir pembelajaran dan pengajaran, pelajar boleh: 1. Menghuraikan sejarah perkembangan reka bentuk landskap secara lisan. 2. Menjelaskan dua prinsip reka bentuk landskap. 3. Pelajar meneroka idea baharu dalam penghasilan reka bentuk landskap melalui model reka bentuk landskap.				
LANGKAH-LANGKAH	**AKTIVITI PENGAJARAN & PEMBELAJARAN**	**PENTAKSIRAN FORMATIF**			**PEMBEZAAN**
PELIBATAN	Pelajar didedahkan dengan sejarah perkembangan reka bentuk landskap.	1. Pemerhatian 2. *I see, I think, I wonder* (helaian dalam rajah) 			

Pelajar dibawa keluar oleh guru untuk melihat landskap di sekitar maktab.

Penerangan mengenai reka bentuk landskap kepada pelajar.
 i) Jenis Landskap
        a. Landskap lembut *(softscape)*

 b. Landskap kejur *(hardscape)*

PENEROKAAN	 Kembali ke studio seni Pelajar membentuk 4 kumpulan (seramai 5 orang dalam satu kumpulan) iaitu kumpulan A, B, C dan D. Hasil perbincangan kumpulan dibuat dalam bentuk peta pemikiran i-THINK. Kumpulan A: Sejarah perkembangan reka bentuk landskap di luar negara. Kumpulan B: Prinsip reka bentuk landskap di luar negara. Kumpulan C: Sejarah perkembangan reka bentuk landskap di Malaysia. Kumplan D: Prinsip reka bentuk landskap di Malaysia Setiap kumpulan mencari maklumat daripada laman sesawang atau bahan bacaan dan dibantu oleh guru. https://www.bhg.com/gardening**/landscaping**…**/landscape-basics/** https://www.bhg.com/…**/landscaping**…**/landscape-basics/landscape**-design-for-beginners/ https://www.gardendesign.com**/landscape**-design/rules.html	Peta i-Think Pembentangan	4 kumpulan pelajar: Berbeza tajuk (content) *Gambar/foto*

			Graphic Organizer
	https://www.pahls.com/landscaping/difference-hardscape-**softscape/**		
PENERANGAN	Pelajar menerangkan hasil perbincangan kumpulan berdasarkan tajuk yang diberi dengan membentangkan persembahan masing-masing secara kreatif	i. Apakah perbezaan landskap landskap kejur dan landskap lembut? ii. Apakah yang dimaksudkan dengan ergonomik? iii. Apakah landskap yang sesuai untuk maktab kita? Kenapa?	
PENGEMBANGAN	Pelajar dapat memberikan idea baharu untuk menghasilkan reka bentuk landskap yang sesuai dengan bentuk muka bumi dan mengambil kira kelestarian alam sekitar.		
PENILAIAN	Pelajar membuat catatan semasa pembentangan kumpulan dan dibantu oleh guru.		
PENUTUP/ RUMUSAN	Hasil pembentangan pelajar setiap kumpulan dinilai oleh guru. Hasil pembentangan dari pelajar akan dirumuskan oleh guru. Guru meminta beberapa pelajar merumuskan perkara yang dipelajari pada hai ini.		
ELEMEN MERENTAS KURIKULUM (EMK)	Kelestarian alam sekitar, Nilai murni		
NILAI / SIKAP	Kepekaan, kefahaman, kerjasama, kreatif dan berdisiplin		
STRATEGI	1. Konstruktivisme 2. Pembelajaran Koperatif		

PEMBELAJARAN ABAD KE-21	Aktiviti secara kolaboratif melalui kaedah: 1. Pemerhatian 2. *I see, I think,, I wonder* 3. *Peta i-Think*
BAHAN BANTU BELAJAR/ SUMBER/ RUJUKAN	1. Buku teks Pendidikan Seni Visual Tingkatan 2 2. Gambar-gambar landskap/Buku Lansdkap 3. Laman sesawang https://www.bhg.com/gardening**/landscaping**.../**landscape-basics/** https://www.bhg.com/.../**landscaping**.../**landscape-basics/landscape**-design-for-beginners/ https://www.gardendesign.com/**landscape**-design/rules.html https://www.pahls.com/landscaping/difference-hardscape-**softscape/**
REFLEKSI	Pelajar-pelajar sangat aktif dan memberikan kerjasama yang baik dalam mematuhi arahan guru untuk mencari dan mencatatkan maklumat daripada laman sesawang. Mereka menggunakan sumber yang telah dicadangkan oleh guru. Terdapat juga kumpulan pelajar yang menggunakan sumber mereka sendiri melalui penggunaan carian enjin yang lain. Tugasan ini dapat dilaksanakan dengan membezakan tahap pencapaian pelajar. Pelajar dapat memahami jenis lanskap dan perkembangan reka bentuk landskap dalam dan luar negara.
CATATAN	Guru meminta pelajar menyediakan bahan untuk membuat eksplorasi landskap pada minggu seterusnya.

<table>
<tr><td colspan="5" align="center">

RANCANGAN PENGAJARAN HARIAN

SUBJEK : SAINS KOMPUTER

</td></tr>
</table>

TINGKATAN	2		**KELAS**	
TARIKH		**MINGGU**	**MASA**	
TEMPAT			**KEHADIRAN**	
TEMA/TOPIK/ BIDANG PEMBELAJARAN	1.0 Perwakilan Data			
STANDARD KANDUNGAN	1.1 Sistem Nombor Perlapanan			
STANDARD PEMBELAJARAN	1.1.1 Membezakan nombor perlapanan dan perpuluhan. 1.1.2 Menukar nombor kepada: i.Perpuluhan kepada perlapanan ii.Perlapanan kepada perpuluhan			
OBJEKTIF PEMBELAJARAN/ KRITERIA KEJAYAAN	Pada akhir pengajaran dan pembelajaran, pelajar dapat : 1. Menukar sekurang-kurangnya lima soalan perpuluhan kepada perlapanan dengan betul. 2. Menukar sekurang-kurangnya lima soalan perlapanan kepada perpuluhan dengan betul.			

LANGKAH-LANGKAH	**AKTIVITI PENGAJARAN & PEMBELAJARAN**	**PENTAKSIRAN FORMATIF**	**PEMBEZAAN**
PENGLIBATAN (5 minit)	1. Pelajar diminta membuat penukaran nombor 5 kepada nombor perduaan supaya guru dapat menilai tahap penguasaan pelajar untuk penukaran nombor perpuluhan kepada nombor perduaan. 2. Semak jawapan: 5 dibahagi dengan 2 |	Nombor	Baki
---	---	---
2	5	
2	2	1
2	1	0
2	0	1 | No. Perduaan = 101_2	Thumbs Up, Thumbs Down Teach a Friend	Pelajar yang menguasai kemahiran tersebut, membantu pelajar yang lain.

PENEROKAAN (15 minit)	Aktiviti 1: 1. Pelajar dikehendaki membentuk kumpulan yang terdiri daripada 3 orang berdasarkan kad nama buah-buahan yang diberikan. 2. Guru mengedarkan Lembaran Kerja 1 3. Pelajar diminta melengkapkan lembaran kerja yang diberi. 4. Pelajar menyemak hasil kerja.	Lembaran Kerja 1 Cloze Procedurers (Isi tempat kosong) Collaboration (menukar dan menyemak jawapan dengan kumpulan lain)	
PENERANGAN (10 minit)	1. Seorang pelajar dipilih untuk menunjukkan contoh menukar nombor perpuluhan kepada nombor perlapanan. Contoh: Tukar 114 kepada nombor perlapanan. <table><tr><td>8</td><td>1 1 4</td><td></td></tr><tr><td>8</td><td>1 4</td><td>2</td></tr><tr><td>8</td><td>1</td><td>6</td></tr><tr><td></td><td>0</td><td>1</td></tr></table>Jawapan: 162_8 2. Pelajar merumuskan kaedah untuk menukarkan nombor perpuluhan kepada nombor perlapanan	G: Apa corak yang anda nampak dalam penukaran nombor perpuluhan ke nombor perlapanan? Contoh Jawapan: Nombor tersebut perlu dibahagikan dengan 8 berulang kali sehingga sifar. Jawapannya ialah baca baki dari bawah ke atas.	
PENGEMBANGAN (15 minit)	Aktiviti 2: 1. Pelajar duduk dalam kumpulan sama. Guru mengedarkan Lembaran Kerja 2. 2. Pelajar diminta melengkapkan lembaran kerja yang diberi. 3. Pelajar menyemak hasil kerja.	Lembaran Kerja 2 Cloze Procedurers (Isi tempat kosong) Collaboration (menukar dan menyemak jawapan dengan kumpulan lain) G: Bagaimana cara untuk menukar nombor perlapanan kepada nombor perpuluhan?	

		Contoh Jawapan: Mendarabkan digit dalam nombor perlapanan dengan nilai tempat nombor perlapanan.	
PENILAIAN (10 minit)	Aktiviti 3: 1. Setiap pelajar diberikan kad jawapan Plickers. 2. Guru memaparkan soalan menggunakan Plickers. 3. Pelajar memberikan jawapan dengan mengangkat kad jawapan yang diberi.	Aplikasi Plickers (www.plickers.com) -guru mencetak analisis daripada Plickers.	
PENUTUP/ **RUMUSAN** (5 minit)	1. Pelajar ditanya "Bagaimanakah anda menukar nombor perpuluhan kepada nombor perlapanan?" 2. Pelajar ditanya "Bagaimanakah anda menukar nombor perlapanan kepada perpuluhan nombor?" 3. Pelajar diberi Set Latihan Pengukuhan.	Soal jawab Latihan Pengukuhan	

ELEMEN MERENTAS KURIKULUM (EMK)	Global Context (kaitan topik dengan kehidupan seharian) Kreativiti Dan Inovasi
NILAI / SIKAP	Berkeupayaan untuk berkomunikasi dan bekerja dengan orang lain untuk mencapai matlamat atau penyelesaian yang sama.
STRATEGI	Inkuiri & Penemuan, Pembelajar Masteri
PEMBELAJARAN ABAD KE-21	Thumbs Up, Thumbs Down, Teach a Friend, Cloze Procedurers, Collaboration
BAHAN BANTU BELAJAR/ **SUMBER/ RUJUKAN**	1. Lembaran Kerja 1 2. Lembaran Kerja 2 3. Latihan Pengukuhan 4. PPT 1 5. www.plickers.com
REFLEKSI	Tugasan diberikan dalam bentuk kumpulan yang telah ditetapkan oleh guru terdiri daripada tahap penguasaan berbeza. Kaedah ini membolehkan pelajar yang pandai membimbing rakan yang lemah untuk sama-sama menyelesaikan lembaran kerja yang diberi. Aktiviti Plickers amat berkesan untuk mengukur tahap penguasaan pelajar kerana semua pelajar mempunyai peluang untuk menjawab soalan yang diberikan. Saya telah memberi bimbingan kepada pelajar yang memperoleh pencapaian yang rendah sebelum Set Latihan Pengukuhan dibekalkan. Set Latihan Pengukuhan perlu dihantar pada kelas akan datang.
CATATAN	

Lembaran Kerja 1

	Nombor Perduaan	Jangkaan Nombor Perduaan
Apakah digit yang digunakan dalam sistem nombor	0 dan 1	
Tukarkan nombor perpuluhan "9" kepada nombor asas dua dan nombor asas lapan.	Jalan Kerja: 	No.	Hasil	Baki
---	---	---	---
2	9		
2	4	8	1
2	2	4	0
2	1	2	0
	0	0	1		

Tuliskan algoritma bagi setiap cara yang digunakan untuk menukar nombor perpuluhan kepada nombor asas yang berikutnya.	Pilihan 1: 1. Bahagikan nombor yang diberikan dengan 2. 2. Catatkan hasil dan baki pembahagian 3. Ulang langkah satu dan dua sehingga hasil pembahagian = 0 4. Baca baki setiap pembahagian daripada baki pembahagian terakhir sehingga baki pembahagian pertama. Pilihan 2: 1. Gunakan jadual nombor perduaan berikut: 2. Bermula daripada lajur paling kiri, soal sama ada kita perlukan 16 untuk menghasilkan 9. Jawapannya, tidak. Oleh itu, letak 0 pada lajur tersebut. 3. Selepas itu, gerak satu lajur ke kanan dan soal sama ada 8 diperlukan untuk menghasilkan nombor 9. Jawapannya, ya. Oleh itu, letak 1 dalam lajur ini.	

ada 8 diperlukan untuk menghasilkan nombor 9. Jawapannya, ya. Oleh itu, letak 1 dalam lajur ini.

2^4	2^3	2^2	2^1	2^0
16	8	4	2	1
0	1			

4. Ambil baki penolakan 9 dan 8 (9 – 8), iaitu 1, dan gerak satu lajur ke kanan. Soal sama ada kita perlu 4, 2 atau 1 untuk bakinya.

2^4	2^3	2^2	2^1	2^0
16	8	4	2	1
0	1	0	0	1

Tukar algoritma anda dengan kumpulan lain. Berdasarkan algorithma daripada kumpulan lain, tukarkan nombor perpuluhan "13" kepada nombor asas berikutnya.		No.	Hasil	Baki	
	2	13			
	2	6	12	1	
	2	3	6	0	
	2	1	2	1	
		0	0	1	

$13 = 11012$

Lembaran Kerja 2

$22_8 = 18_{10}$

Contoh Jalan Kerja

22_8

Pemberat	8^1	8^0
Nilai	2	2

22_8
$= (2 \times 8^1) + (2 \times 8^0)$
$= 16 + 2$
$= 18_{10}$

$75_8 =$

$417_8 =$

$514_8 =$

$2341_8 =$

Latihan Pengukuhan
Isikan tempat kosong di bawah dengan nombor perlapanan yang mewakili
nombor perpuluhan yang ditunjukkan.

Nombor Perpuluhan	Nombor Perlapanan
5	
7	
9	
11	
46	
77	
108	
200	
555	
1000	
2140	
10230	

Nombor Perlapanan	Nombor Perpuluhan
38	
108	
328	
538	
748	
1328	
6368	
7378	
20408	
41178	
55428	
107438	

LAMPIRAN – POWER POINT

- Murid diminta membuat penukaran nombor supaya guru dapat menilai tahap penguasaan murid untuk penukaran nombor perpuluhan kepada nombor perduaan.
- Jika terdapat murid yang belum menguasai kemahiran tersebut, minta murid yang telah berjaya menguasainya menjelaskan cara penukaran kepada rakan yang lain.
- Pastikan murid berjaya menguasai atau mengimbas kembali kemahiran ini sebelum ke slaid seterusnya.
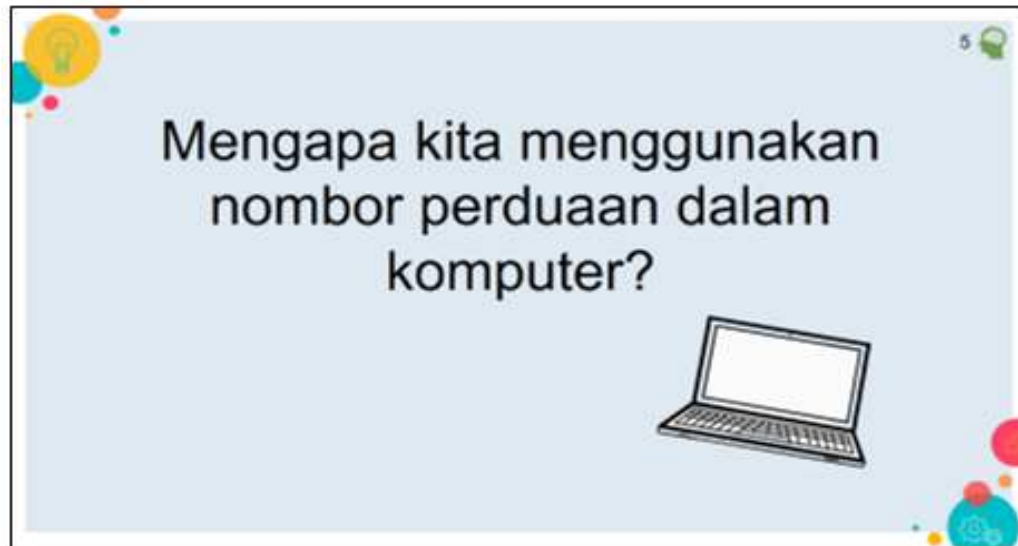- Contoh jawapan: 101_2

IMBAS KEMBALI

3
SP1.1.1

Contoh jawapan untuk rujukan guru:
5 dibahagi dengan 2

	Nombor	Baki
2	5	
2	2	1
2	1	0
2	0	1

No. Perduaan = 101_2

4

LENGKAPKAN LEMBARAN KERJA 1

- Ini adalah untuk merangsang **pemikiran logik** murid supaya murid dapat memahami **peniskalaan** konsep seni bina komputer.
- Contoh jawapan daripada murid: "Nombor perduaan hanya ada dua nombor, iaitu 0 dan 1. 0 mewakili arus elektrik ditutup. 1 mewakili arus elektrik dibuka. Pembukaan dan penutupan arus merupakan cari yang paling mudah dan pantas untuk komputer memprocess infomasi".

Pemikiran Komputasional:
- Pemikiran Logik: Murid harus memberi penjelasan yang logik atas penggunaan nombor perduaan dalam komputer seperti "Pembukaan dan penutupan arus elektrik merupakan cari yang paling mudah dan pantas untuk komputer memprocess infomasi."
- Peniskalan: Memilih cara yang paling mudah adalah salah satu kemahiran peniskalan, dimana penggunaan "ON" "OFF" adalah cara yang paling mudah untuk berkomunikasi dengan komputer.

NOMBOR PERLAPANAN

6

- Dengan itu, nombor perlapanan dihasilkan.
- Salah satu lagi sebab kenapa nombor perlapanan digunapakai ialah, ia adalah nombor asas terbesar daripada hasil kuasa dua dan tidak memerlukan aksara istimewa.

Nota untuk guru: maksud "tidak memerlukan aksara istimewa" ialah, nombor perlapanan hanya mengguna digit, tidak seperti nombor perenambelasan yang menggunapakai aksara tambahan. Guru boleh menjelaskan ayat ini bila masuk ke topik nombor perenambelasan

7

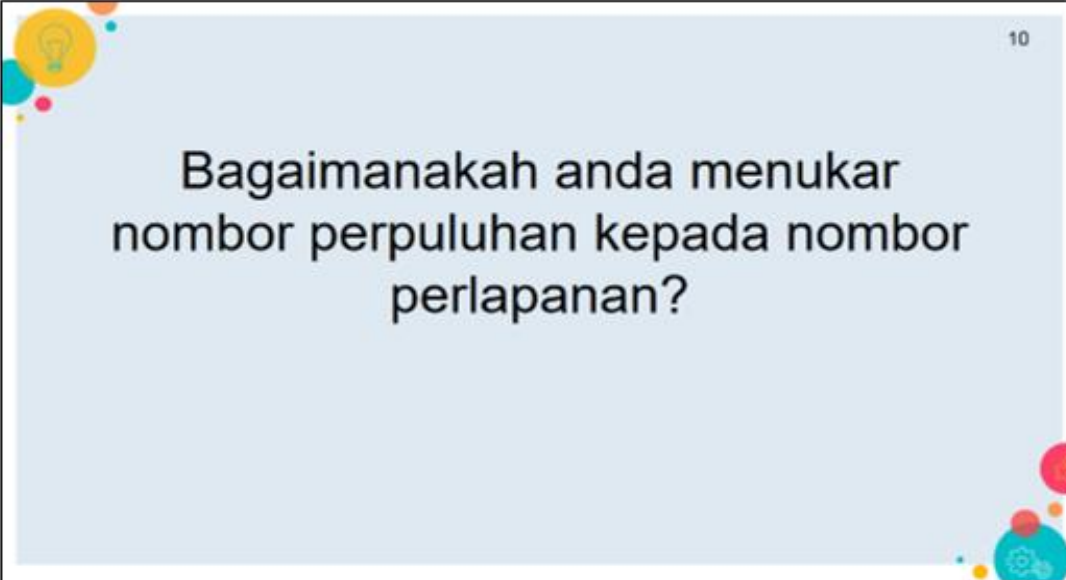Cara penukaran nombor perpuluhan kepada nombor perlapanan:

Contoh: Tukar 114 kepada nombor perlapanan.

8	114	
8	14	2
8	1	6
	0	1

Jawapan: 162_8

Guru menunjukkan contoh menukar nombor perlapanan kepada nombor perpuluhan.
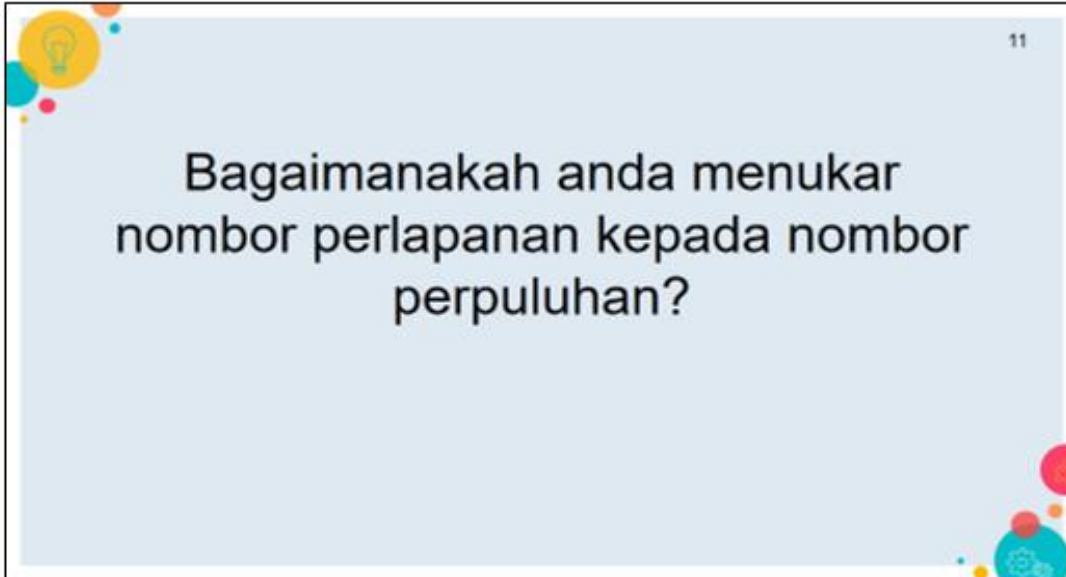
LENGKAPKAN
LEMBARAN
KERJA 2

8

LENGKAPKAN
LEMBARAN
KERJA 3

9

- Guru menanyakan soalan berikut: "Bagaimanakah anda menukar nombor perduaan kepada nombor perlapanan?"
- Beritahu murid bahawa mereka akan mempelajari caranya dalam pengajaran seterusnya.

- Guru menanyakan soalan berikut: "Bagaimanakah anda menukar nombor perduaan kepada nombor perlapanan?"
- Beritahu murid bahawa mereka akan mempelajari caranya dalam pengajaran seterusnya.

RANCANGAN PENGAJARAN HARIAN

SUBJEK: PENDIDIKAN JASMANI & PENDIDIKAN KESIHATAN

TINGKATAN	2			KELAS	201 202 203	204 205 205
TARIKH	31 OGOS 2018	MINGGU	ALPHA	MASA	7.40 – 8.40	3.00 – 4.00
TEMPAT	BILIK SEMINAR			KEHADIRAN		

TEMA/TOPIK/ BIDANG PEMBELAJARAN	2.0 PENYALAHGUNAAN BAHAN
STANDARD KANDUNGAN	2.1 Kemahiran menangani situasi berisiko terhadap penyalahgunaan bahan kepada diri, keluarga dan masyarakat. Cara menangani: Risiko penyalahgunaan bahan.
STANDARD PEMBELAJARAN	2.1.1 Menghuraikan risiko penyalahgunaan bahan. 2.1.2 Mengaplikasikan kemahiran kecekapan psikososial dalam menangani risiko penyalahgunaan bahan. 2.1.3 Menilai faedah tidak melibatkan diri dalam penyalahgunaan bahan.
OBJEKTIF PEMBELAJARAN/ KRITERIA KEJAYAAN	**Pada akhir pengajaran dan pembelajaran , pelajar dapat :-** 1. Menyenaraikan tiga jenis bahan yang boleh disalah guna. 2. Menyatakan secara lisan enam risiko penyalahgunaan bahan. 3. Menghuraikan dua elemen kemahiran kecekapan psikososial dalam menangani risiko penyalahgunaan bahan. 4. Menerangkan empat faedah tidak melibatkan diri dalam penyalahgunaan bahan.

LANGKAH-LANGKAH	AKTIVITI PENGAJARAN & PEMBELAJARAN	PENTAKSIRAN FORMATIF	PEMBEZAAN
PENGLIBATAN	1. Guru menayangkan slaid yang mengandungi keratan-keratan media cetak berkaitan tajuk penyalahgunaan bahan.	1. Apakah yang kamu tahu tentang penyalahgunaan bahan berdasarkan slaid?	

PENEROKAAN	(Untuk membincangkan tajuk/topik berikut:	1. Setiap kumpulan mencatat maklumat tentang penyalahgunaan bahan di atas kertas sebak.	3 kumpulan pelajar iaitu:
	1. Pelajar dibahagikan kepada tiga kumpulan dan melaksanakan aktiviti seperti yang terdapat dalam kad tugasan.		
			K1- Risiko Penyalahgunaan Bahan.
			i) Memberi contoh-contoh risiko penyalahgunaan bahan.
	2. Setiap kumpulan melantik ketua / wartawan yang akan berkongsi penemuan / hasil perbincangan kumpulan.		ii) Menghubungkaitkan risiko penyalahgunaan bahan dalam kehidupan harian.
			K2- Kemahiran Kecekapan Psikososial
			i) Mendemonstrasikan kemahiran kecekapan psikososial dalam menangani penyalahgunaan bahan.
			ii) Menyenaraikan contoh-contoh kemahiran kecekapan psikososial.
			K3- Faedah Tidak Melibatkan Diri Dalam Penyalahgunaan Bahan
			i) Menyenaraikan faedah tidak melibatkan diri dalam penyalahgunaan bahan terhadap diri, keluarga dan masyarat.

PENERANGAN	1. Wakil setiap kumpulan membentangkan hasil tugasan kumpulan masing-masing.	1. *Gallery Walk* 2. Borang penilaian kumpulan	1. Pelajar yang pasif akan disoal secara lisan oleh guru untuk memastikan tahap kefahamann pelajar.
PENGEMBANGAN	Guru menyoal pelajar secara lisan.	Soalan: 1. Senaraikan jenis-jenis bahan yang terlibat. 2. Terangkan risiko penyalahgunaan bahan kepada; i) diri ii)keluarga iii) masyarakat 3. Nyatakan kemahiran kecekapan psikososial 4. Jelaskan faedah tidak melibatkan diri dalam penyalahgunaan bahan	
PENILAIAN	Pelajar dibahagikan kepada enam kumpulan kecil (3 hingga 4 orang pelajar) dan diminta untuk menyediakan satu poster berkaitan "Bahaya Penyalahgunaan Bahan"	Poster (tugasan hendaklah dihantar selepas dua hari dari kelas berlangsung)	
PENUTUP/ RUMUSAN	Pelajar membuat refleksi atau dapatan dengan cara menulis di atas *sticky note*. Mereka menyatakan pendapat dan pandangan mereka. Guru membuat rumusan keseluruhan berdasarkan pandangan pelajar		
ELEMEN MERENTAS KURIKULUM (EMK)	1. Bahasa 2. Patriotisme 3. Kreativiti Dan inovasi		
NILAI / SIKAP	1. Kerjasama 2. Rasional 3. Bertanggungjawab		
STRATEGI	Pembelajaran Masteri		
PEMBELAJARAN ABAD KE-21	Gallery walk, sumbang saran, kerja berpasukan		

BAHAN BANTU BELAJAR/ SUMBER RUJUKAN	1. Slaid berkaitan keratan media mengenai penyalahgunaan bahan. 2. Komputer /Internet /LCD 3. Kad arahan tugasan kumpulan. 4. Kertas sebak dan alat tulis. 5. Buku Teks Pendidikan Jasmani dan Pendidikan Kesihatan Tingkatan 2.
REFLEKSI	1. Guru mengalakkan pelajar mencari maklumat daripada sumber yang sahih dan tepat. Guru memberi contoh untuk mencari bahan di laman sesawang : www.myhealth.gov.my dan www.adk.gov.my. 2. Pelajar kumpulan 2 tidak memahami kemahiran kecekapan psikososial dan guru memberi beberapa contoh iaitu kemahiran membuat keputusan, kemahiran mengurus tekanan dan kemahiran mengurus emosi. 3. Adalah lebih sesuai sekiranya pelajar dapat menyiapkan poster dalam sesi PdP supaya guru dapat menilai tahap kefahaman dengan mengajukan soalan kepada pelajar melalui poster yang dipamerkan. Poster boleh dilengkapkan dalam masa kedua pengajaran ini.
CATATAN	RPH ini boleh digunakan untuk dua kali pertemuan.

Lampiran (Slaid)

MODUL KSSM TINGKATAN 2
PENDIDIKAN KESIHATAN

PENYALAHGUNAAN BAHAN

8 Semasa!

KOSMO! AHAD 16 MAC 2014

Tiga lagi pengunjung konsert terbuka berentak disko di Bukit Jalil kritikal

Enam maut terlebih ambil dadah

KUALA LUMPUR - Tindakan segelintir pengunjung Festival Future Music di pekarangan Stadium Nasional Bukit Jalil di sini malam kelmarin yang mengambil dadah methamphetamine berlebihan semasa menyaksikan konsert disko itu mengundang malapetaka apabila enam daripada mereka maut semalam.

Ketua Polis Kuala Lumpur, Datuk Mohmad Salleh berkata, seorang daripada mereka maut di tempat kejadian manakala lima yang lain disahkan meninggal dunia di Hospital Universiti Kebangsaan Malaysia (HUKM) di sini dan Pusat Perubatan Universiti Malaysia (PPUM), Petaling Jaya.

Katanya, mangsa yang meninggal dunia terdiri daripada Syazana Sohaimee, 23, Sabreena Kamarudin, 21, Kamal Zekry Kamal Basha, 20, M, Suresh, 28, Victor Wong E Hern, 26, dan Nor Faizza Mohd. Wazir, 27.

"Dalam kejadian kira-kira pukul 1.30 pagi itu, Suresh dikatakan rebah semasa semua pengunjung yang sedang leka berhibur pada penghujung acara sebelum dia disahkan meninggal dunia di lokasi konsert.

"Lapan pengunjung lain turut rebah dan terdapat pendarahan pada hidung dan telinga mereka," katanya pada sidang akhbar di Ibu Pejabat Polis Daerah Cheras di sini semalam.

Jelas Mohmad, dua warga Singapura dikenali sebagai Wilopo Aileen dan Lim Shu Wei yang kedua-duanya berusia awal 20-an serta seorang remaja tempatan, Mohd. Hazwan Husin, 19, berada dalam keadaan kritikal dan masih dirawat di HUKM dan PPUM.

"Ekoran kejadian itu, kita telah menahan 22 individu termasuk 12 warga asing berusia antara 20 hingga 30 tahun yang memiliki dadah methamphetamine dan ganja.

"Mereka disyaki membawa dadah berkenaan dari negara luar sebelum diagihkan ketika konsert berlangsung.

"Kes disiasat di bawah Seksyen 39B, Akta Dadah Berbahaya 1952," katanya.

Katanya, konsert berentak disko yang dimainkan secara terbuka itu berlangsung selama tiga sejak hari Khamis lepas melibatkan penyertaan 32 penyanyi antarabangsa.

"Konsert yang dianjurkan sebuah syarikat tempatan, Live Scape Sdn. Bhd. itu mengenakan caj tiket sebanyak RM200 hingga RM400 seorang," katanya.

Berikutan kejadian itu, polis telah mengarahkan konsert terakhir yang sepatutnya berlangsung malam tadi dibatalkan.

PENGUNJUNG membanjiri tapak konsert Festival Future Music di pekarangan Stadium Nasional Bukit Jalil, Kuala Lumpur petang semalam.

www.fb.com/FanPageHumaizi
www.ahmadhumaizi.com

SYAZANA   KAMAL ZEKRY
SABREENA   FAIZZA

INFO Methamphetamine
- Juga dikenali dengan nama ice.
- Berbentuk ketulan kristal atau kaca pecah.
- Kualiti methamphetamine boleh dikategorikan kepada tiga iaitu putih kristal, putih kemerahan dan kualiti rendah mempunyai rasa pahit.
- Dijual dengan setiap gram RM300 hingga RM400.

Kesan dan bahaya penggunaan
- Yakin pada diri sendiri, bertenaga dan cergas.
- Boleh berjaga tanpa tidur sehingga 2 hingga 3 hari.
- Mulut berbuih, berlaku menahan di telinga dan mulut.
- Kesan psikologi seperti halusinasi dan paranoid

Sumber: Polis Diraja

Isnin 28 Mac 2011
23 Rabiulakhir 1432H
Harga RM1.20
PPK 220/12/2011 (026866)

Borneo
Citra Generasi Prihatin

Masukkan bahaya dadah dalam silibus mata pelajaran

Oleh YAP SIONG HAN
sionghan_yap@yahoo.com

SEPANGGAR: Penggunaan dadah merupakan punca utama keruntuhan moral dan akhlak golongan muda atau belia.

Menteri Pembangunan Sumber dan Kemajuan Teknologi Maklumat, Datuk Jainab Ahmad Ayid berkata semua pihak harus bekerjasama dalam usaha membanteras musuh nombor satu negara ini kerana ianya akan mengancam kesejahteraan individu, institusi kekeluargaan serta memberi kesan negatif kepada masyarakat sekitar.

"Saya menyokong penuh cadangan pihak Agensi Anti Dadah Kebangsaan (AADK) Sabah yang telah berbincang dengan Kementerian Pelajaran Malaysia mengenai bahaya penggunaan dadah dijadikan satu silibus dalam mata pelajaran sekolah," katanya ketika di sidang media kelmarin.

Katanya, pendekatan ini amat baik digunakan kerana ia mampu memberi kesedaran kepada kanak-kanak mengenai bahaya dan maksud gejala dadah sekaligus dengan harapan kanak-kanak ini menyebarkan maklumat ini kepada rakan mereka.

Menurutnya, walaupun cadangan ini perlu dikaji dengan teliti, namun ia perlu diutamakan dan dipercepatkan kerana dadah adalah musuh utama negara serta mampu untuk menyelamatkan golongan muda yang bakal menjadi pelapis pemimpin di masa hadapan.

Sehubungan itu, beliau menyeru kerjasama dari pihak polis, Dewan Bandaraya Kota Kinabalu (DBKK), pihak sekolah, AADK Sabah supaya memantau lokasi-lokasi yang dijadikan 'hot spot' penjualan dadah jenis syabu kepada golongan muda dan pelajar.

"Pada ketika ini, saya dikejutkan dengan aduan yang mengatakan ada di kalangan PTT ini menunggu di pintu pagar sekolah dan berkampung di kawasan perumahan dengan tujuan menjual syabu kepada pelajar. Saya berharap dengan kerjasama yang erat dari semua pihak mampu untuk membendung masalah ini daripada merebak," katanya.

Sebelum itu, Jainab yang merasmikan Program Outreach Klinik Cure & Care 1 Malaysia berkata, kerjasama dari kalangan ibu bapa juga penting dalam isu ini kerana mereka merupakan penasihat utama kepada anak-anak mereka.

Selain itu, katanya, pendekatan perkhidmatan Klinik Cure & Care 1 Malaysia boleh membawa transformasi dalam menangani individu yang mempunyai masalah dengan gejala ini serta penasihat di peringkat awal dan peringkat gian digalakkan untuk mendapatkan nasihat daripada klinik ini.

"Sekarang ada arah yang boleh dituju tanpa merasa diancam dengan undang-undang, para ibu bapa sering dibelenggu dengan stigma negatif berkaitan isu ini dan menyembunyi kisah sebenar anak mereka tetapi dengan adanya klinik ini para ibu bapa perlu tampil ke hadapan tanpa rasa takut," tegasnya.

Beliau menyeru semua pihak yang mengalami masalah dadah tampil dan menerima nasihat daripada klinik ini agar mampu berubah dan menjadi seorang bangsa negara yang berkualiti serta mampu menyumbangkan sesuatu kepada ekonomi negara.

Turut hadir pada majlis ini adalah Pengarah AADK Sabah Bakri Bibi, Pengarah Klinik Cure & Care 1 Malaysia Papar, Roswati Apin, wakil Ketua Polis Kota Kinabalu, Inspektor Andy Makmur Alwati, dan wakil Ketua Pengarah DBKK iaitu Pengerusi PEMADAM Bandaraya, Ajim Walid.

SIMBOLIK...Jainab (kanan) melekatkan poster anti-dadah di rumah salah satu penduduk Taman Kuala Sepanggar sambil disaksikan oleh Bakri (kiri) dan Andy (dua kiri).

Berita Dadah = https://www.youtube.com/watch?v=D_xpJCqqrRc

Penutupan / Rumusan

Lampiran 2

PENILAIAN KEMAHIRAN INTERPERSONAL

Nama pelajar yang dinilai   :   …………………………………………………….

Kelas   :   …………………………………..   No. Maktab :   …………………….

	Pernyataan	Sila tandakan (/) pada kotak yang berkenaan		
		Tiada	Kadang-kadang	Selalu
A	Berkomunikasi dengan baik sesama ahli kumpulan.			
B	Memberi galakan kepada ahli kumpulan semasa sesi perbincangan.			
C	Mendengar dan bercakap pada masa yang sesuai.			
D	Tidak membangkang sesama rakan sepasukan semasa berbincang.			
E	Membantu rakan sepasukan menyiapkan tugasan			

Nama pelajar yang menilai   :   …………………………………………………….

Kelas   :   …………………………………..   No. Maktab :   …………………….

BAHAGIAN PENDIDIKAN MENENGAH