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| Practical and Written Assessment  Lessons Planning with Teacher Talk  Learning Management 4 – Assessment Task 1  Kathryn Kavanagh – S0198800    Monday 20th August, 2012 |

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**Rationale**

**Unit Title:** Who is Eating Who? **KLA:** Science

**Focus:** Food chains and Food Webs **Grade:** 6

**Duration of Unit:** 12 Lessons **Selected LEP’s:** Lessons 4 and 5

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Content Descriptors -**  **Biological Science** | | **Elaborations** | | | |
| There are differences within and between groups of organisms; classification helps organise this diversity | | * considering the reasons for classifying such as identification and communication * grouping a variety of organisms on the basis of similarities and differences in particular features * classifying using hierarchical systems such as kingdom, phylum, class, order, family, genus, species | | | |
| Interactions between organisms can be described in terms of food chains and food webs. | | * using food chains to show feeding relationships in a habitat * constructing and interpreting food webs to show relationships between organisms in an environment * classifying organisms of an environment according to their position in a food chain   (ACARA, 2012) | | | |
| **Type of Assessment** | | | **Assessment Focus** | **Time Frame** | **Purpose** |
| **“Plants or Meat” worksheets.**  Students will work individually on a worksheet which asks them to differentiate between herbivores and carnivores as well as give a definition of each and list characteristics of both groups. | | | The students ability to classify animals and plants according to what they eat  Group animals according to their characteristics. | Lesson 5 | Formative |
| **Putting it all together**  The students will work individually to produce a scientific poster which will include information relating to a specific ecosystem. They will include information on energy sources, consumer groups, adaptations of animals in that ecosystem and a food web showing the energy flow between plants and animals found in that area. | | | D1 & P1  D2 & P2  D3 & P3  D4 & P4  D5 & P5  D6 & P6 | Lesson 12 | Summative |
| **Ways to monitor learning and assessment** | | | | | |
| “Plants or Meat’ work sheets | Students will receive a mark for each animal in the right column and a mark for their definition and features list. When they receive their marks back the teacher will discuss with them what they can do to get a better mark. Get the students to set personal goals for the unit. Reflect by asking the following questions:   1. Did the students understand and enjoy the activity? 2. What was the average mark for the class? What could I have done to get this higher? 3. Could I have taught the students in a way they would have understood better? | | | | |
| Putting it all Together  **Final**  **Assessment**  **Piece** | Individual written feedback will be given to each students based on a specific criteria sheet. This criteria sheet will give feedback on the students’ knowledge and understanding of the energy cycle, consumer groups, food chains and food webs. The student’s results will be reported to their parents and themselves in the form of an end of term report card.  Get feedback from the students at the end of the lesson by asking:   1. Did they enjoy the unit of work 2. What was the most enjoyable experience of the unit 3. What would they have liked to see included in the unit 4. What did they learn during the unit   Give positive verbal feedback to the students by letting them know how well they worked during the unit and how much they had learned during the term. | | | | |

**Justification**

Learning involves many different components, all of which play an important role in scaffolding the students learning within the classroom. This justification will discuss the content, teaching strategies and curriculum links included in the sequential lesson plans featured in this assignment. It will also justify the selection of teaching resources and teacher talk used during these lessons to ensure productive learning occurs. Teacher talk plays an important role in scaffolding student’s acquisition of new knowledge and can be used in a range of different ways depending on the learners. The way scaffolding assists learners in the classroom is essential to ensure the best outcomes for students and teachers. Gibbons (2002) believes that ‘*scaffolding is the temporary assistance by which a teacher helps a learner know how to do something, so that the learner will later be able to complete a similar task alone.*’ The teaching strategies selected are based on the teaching continuum and aim to move students from low to high order thinking.

According to the science teaching continuum as described by Wolfinger (1984), the use of various teaching methods moves students participating in science lessons through the different phases of exposition, discussion and demonstration, which are low order thinking teaching strategies, to the higher order thinking levels of guided discovery, guided inquiry and open inquiry. This is an essential part of knowledge acquisition as the students are able to use their skills and abilities to discover new information for themselves. These teaching methods have been used throughout the learning experience plans selected for this assignment. At the start of both lessons learning must occur through direct instruction engaging a variety of senses to ensure students understand the content they are exploring however, during the lessons the learning manager would move the students towards higher order thinking through a range of different activities. The activities selected for these lessons include the use of a slideshow which encourages students learning through the stimulation of the visual senses. *‘Visual stimulation actually rewires the brain, making stronger connections while fostering visual thinking, problem solving, and creativity.’* (Simmons, 1995).  This helps to engage learners in the lessons as well as provide for students who are visual learners. The use of the pictures also opens the class up to another teaching method, class discussion.

The use of class discussions when learning is an important part of the cooperative learning children need to participate in to build communication skills and relationships. Two forms of discussion have been used in the selected lessons, guided and class discussion. Bruner (1996) views learning as the result of meaningful interaction and dialogue with others. This suggests that by giving the students the opportunity to participate in learning discussions they are able to process and store knowledge effectively. The use of guided discussion in the classroom ensures the students have access to the support they need. *High engagement might prove frustrating if the teacher is not active in scaffolding the challenging learning tasks*. (Mariani, 1997). By using a mixture of guided discussion and class discussion the learning manager is able to allow cooperative learning while still assisting the learners and scaffolding the learning experience. The guided discussion can be seen through the second script excerpt from lesson four where the learning manager uses guiding questions and provides more support for learners. In contrast the class discussion seen in the first script excerpt from lesson five shows the learning manager directing questions towards the learners and allowing them to discuss and find the answers on their own instead of offering up solutions. From here the learning manager can move onto the higher order thinking strategies such as individual work and open inquiry based activities.

Marzano and Pickering (1997) support the use of open inquiry in a classroom setting by creating opportunities for learners to discover or figure out the new information for themselves. By allowing time for the students to explore the topic and find new information for themselves it helps to concrete the information in the student’s minds. During the independent learning phase of both lessons the students participate in activities which will test the student’s knowledge and allow the learning management to gain feedback on the students’ progress. By allowing the students to participate in independent learning the teacher is allowing the students to take responsibility for their own learning. This is an important strategy for reaching all intended learning outcomes as well as a vital part of producing proactive and efficient learners.

In conclusion the lesson plans selected for this piece of assessment use multiple teaching methods researched and suggested by a number of authors to engage and assist students in the effective acquisition of new knowledge. The teacher talk which accompanies these lessons is used effectively to provide structured learning experiences in the field of science. The assessment requirements of this unit also assist students in preparing for their futures by integrating ITC skills, public speaking, English and language skills. The students are exposed to various strategies which will assist them before, during and after information is received, not only in this unit but throughout their lives. These teaching strategies are an important part of the teaching process and are vital to ensure the best possible outcome for students.

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| **Sequenced Learning** | | | | | | | |
| **ILO** | **Learning experiences and teaching strategies** | | **Link to Dimensions of Learning** | **Adjustments** (for needs of learners) | **Resources** | | **Assessment and Feedback** |
| **D2**  **P2**  **D6**  **P6** | **Lesson 4 of 12**  **Introducing Herbivores**  What do they eat – What characteristics do they have – How do they get their food  **(Script Excerpt 1)**  ***DIRECT INSTRUCTION/JOINT CONSTRUCTION***  LM writes the word ‘Herbivore’ in the middle of a large piece of paper and sticks this to the board.  LM lets the students know that during the lesson they will be adding the foods herbivores eat and the features they have which allow them to eat this food to the mind map.  LM adds to this mind map each time a student comes up with a correct response.  **Introduction**  ***DIRECT INSTRUCTION***  LM discusses with the students what a herbivore is.  LM asks the students to watch the following YouTube clip.  <http://www.youtube.com/watch?v=TFbMvjM4aKo>  ***DISCUSSION***  LM asks the students the following questions: What did the Dr say herbivores ate? What features do herbivores have? Can you think of any herbivores that we have in Australia? What do those animals eat?  **Body**  ***GUIDED/DISCUSSION***  **(Script Excerpt 2)**  LM guides students through the picture slide show, asking them at each picture if they think the animal is an herbivore or not. Ask the students what food types the animals might eat and what features these animals have. For example: Flat teeth for grinding leaves and grass, long necks for reaching high leaves, climbing abilities to reach the fruits in the forest canopy.  LM allows students to add these responses to the mind map. Use different colours to differentiate the food types from the animal characteristics  **Conclusion**  ***DIRECT INSTRUCTION***  LM plays the film clip:  <http://www.youtube.com/watch?v=f-Cgw_UXP-w>  ***INDEPENDENT***  LM asks the students to write a few sentences describing what herbivores eat and what features they have which allow them to eat these foods. After they have written their sentences ask them to draw three foods that a herbivore would eat.  LM allows students who finish their work early have a play around on the Food Chain website: <http://lookingatfoodchains.weebly.com/food-chains.html> | | **Dimension 1**  Provide opportunities for students to get to know and accept each other  Establish a sense of academic trust  Use a variety of ways to engage students in classroom tasks  **Dimension 2**  Construct Meaning   * Use the 3 minute pause * Help students construct meaning for vocabulary terms   Organise   * Help students understand the importance of organising information * Use graphic organisers   Construct Models   * Using an online Mind Mapping website   **Dimension 5**  Critical Thinking   * Take a position when the situation warrants it * Respond appropriately to others feelings   Creative Thinking   * Push the limits of your knowledge and abilities   Self-regulated Thinking   * Monitor your own thinking * Identify and use necessary resources | Consider students who may have learning difficulties. These students may need to work with a teacher aid during lessons.  Ensure each student has an equal chance to share with the class and that all students feel part of the conversation.  Ensure student B can hear the film clip as he has a hearing impairment.  Teacher observations noting the students level of participation and noting any students who are struggling or have fallen behind. | Coloured Markers  Large sheets of paper  (can be coloured to represent the different groups of consumers)  Blue tack to hang up the sheets of paper.  Film Clips  Slide show of pictures  New Science Book  Word Wall  Website | | Contributions to brainstorming activity – foods that Herbivores eat.  Participation in discussions – correct answers, willingness to answer, guiding questions needed  Work Samples – sentences include correct and relevant information |
| **D2**  **P2**  **D6**  **P6** | **Lesson 5 of 12**  **Introducing Carnivores**  What do they eat – What characteristics do they have – How do they get their food  ***DIRECT INSTRUCTION/JOINT CONSTRUCTION***  LM writes the word ‘Carnivore’ in the middle of a large piece of paper and sticks this to the board.  LM lets the students know that during the lesson they will be adding the foods carnivores eat and the features they have which allow them to eat this food to the mind map.  LM adds to this mind map each time a student comes up with a correct response.  **Introduction**  ***DIRECT INSTRUCTION/DEMONSTRATION***  LM gets the students to watch the YouTube clip on this website. (Play to 1:30seconds in) <http://lookingatfoodchains.weebly.com/food-chains.html>  ***DISCUSSION***  **(Script Excerpt 1)**  LM asks the students to answer the following questions: What did Annie say carnivores ate? What features do carnivores have? Can you think of any carnivores that we have in Australia? What do those animals eat?  **Body**  ***GUIDED/DISCUSSION***  LM guides the students through the picture slide show, asking them at each picture if they think the animal is a carnivore or not. Ask them what food types the animals might eat and what features these animals have. For example: Sharp teeth for tearing meat, strong jaws for killing their prey, speed to catch their prey.  LM adds these responses to the mind map. Use different colours to differentiate the food types from the animal characteristics  **Conclusion**  ***DIRECT INSTRUCTION***  LM gets the students to watch this film clip on adaptations: [http://www.youtube.com/watch?v=GnffYkN1Udk](http://www.youtube.com/watch?v=GnffYkN1UDk)  ***INDEPENDENT***  **(Script Excerpt 2)**  LM ask the students to write a few sentences describing what carnivores eat and what features they have which allow them to eat these foods. After they have written their sentences ask them to draw three foods that a carnivore would eat.  **Assessment Activity**  ***INDEPENDENT***  LM hands out the “Plants or Meat” work sheets.  LM instructs the students to cut out the names of the animals and glue them into either then ‘Herbivore’ or ‘Carnivore’ column on their work sheets. At the bottom of the work sheet they need to write the definition of each and name 3 features that each group would have.  LM collects these for marking.  LM allows students who finish their work early have a play around on the Food Chain website: <http://lookingatfoodchains.weebly.com/food-chains.html> | **Dimension 1**  Help students recognize they have the abilities to complete a particular task  Provide appropriate feedback  Create classroom tasks that relate to students interests and goals  **Dimension 2**  Construct Meaning   * Create opportunities for students to discover or figure out new information on their own   Organise   * Have students use graphs and charts   Construct Models   * Construct a table   **Dimension 5**  Critical Thinking   * Be accurate and seek accuracy * Be clear and seek clarity * Restrain impulsivity   Creative Thinking   * Perseverance * Push the limits of your knowledge and abilities * Generate, trust and maintain your own standards of evaluation   Self-regulated Thinking   * Monitor your own thinking * Plan appropriately * Respond appropriately to feedback | | Consider students who may have learning difficulties. These students may need to work with a teacher aid during lessons.  Ensure each student has an equal chance to share with the class and that all students feel part of the conversation.  Ensure student B can hear the film clip as he has a hearing impairment.  Teacher observations noting the students level of participation and noting any students who are struggling or have fallen behind. | Coloured Markers  Large sheets of paper  (can be coloured to represent the different groups of consumers)  Blue tack to hang up the sheets of paper.  Film Clips  Picture Slide Show  Science Book  “Meat or Plant” work sheet  Word Wall | Contributions to brainstorming activity – foods that Herbivores eat.  Participation in discussions – correct answers, willingness to answer, guiding questions needed  Work Samples – sentences include correct and relevant information  Assessment Activities –  Correct identification of animals | |

**Teacher Talk Script**

**Lesson 4**

**Script Excerpt 1: Introduction - Introducing herbivores. Working out what they eat. *DIRECT INSTRUCTION***

**LM:** Good morning class. So you know that during our science unit for this term we are looking at food chains and food webs. Today you will be learning about one of the participants involved in both of these. Can anyone tell the class what I mean by participant?

**Student:** Does it mean that we will be learning about the animals that we would find in a food web or food chain?

**LM:** Yes that’s right. A participant is someone or something that is a part of an event or activity. *(Writes “Herbivores” on a piece of paper. Sticks this to the board).* So today we will be looking at HERBIVORES. These animals form one of the levels of our food chain. Does anyone want to have a guess at what an herbivore might be?

**Student:** Well maybe because it starts with the word HERB it might mean they eat herbs?

**LM:** Very close. Does anyone else have an idea about what they might eat?

**Student:** A herb is a plant so maybe it means they eat plants.

**LM:** Excellent deduction skills class. The word herbivore mean ‘plant eater’. So today the animals we will be looking at all eat only plants. What types of plants could we add to our mind map so we can see what plants herbivores eat?

**Script Excerpt 2: Body – Going through slide show with students. Discussing which animals might be herbivores. *GUIDED DISCUSSION***

**LM:** Ok class. Now that we know what herbivores eat and what characteristics they might have, let’s take a look at some pictures and see if we can work out which animals are herbivores. *(Begins Slide Show).* So our first animal is a rabbit. Do we think this animal is a herbivore?

**Class:** YES!

**LM:** Hands up who can justify why they think this animal is an herbivore?

**Student:** Well we know rabbits eat grass and leafy green vegetables like lettuce and carrots of course.

**LM:** Yes but just because we know they eat plants does that mean they don’t eat any other foods?

**Students:** Well no. But the Dr said they will have flat teeth for grinding foods and rabbits have flat teeth and they don’t have sharp claws and they aren’t very fast.

**LM:** Very good. I like the way you included the Dr’s explanation of an herbivore in your answer. Let’s try another one. *(Changes picture).* Ok so now we have a brown bear. Who thinks the brown bear is a herbivore?

**Class:** *(Students hesitate. Some say yes, others say no.)*

**LM:** Ok then. So we have different opinions about the bear. How can we work out if it’s an herbivore?

**Student:** Bears eat berries and fruits.

**LM:** Yes they do don’t they. But they also eat meat. This is a very tricky one isn’t it? Can anyone suggest what brown bears might be?

**Student**: Maybe because they eat meat and plants they have a different name?

**LM:** That’s exactly right. Brown bears fall into a special group called “Omnivores”. We will be looking at this group of animals later in this unit. For now let’s find out if our next animal is an herbivore or not. *(Changes Slide.)*

**Lesson 5**

**Script Excerpt 1: Introduction – Discussing with the students what they have just seen on the YouTube clip. *DISCUSSION.***

**LM:** Ok grade 6. So in the clip Annie and Moby were discussing the different types of animals and what they eat. Can anyone remember what herbivores eat?

**Student:** We talked about that last lesson. Its animals like cows and sheep and deer and we said they ate plants like grass and trees.

**LM:** That’s right. Now who can tell me what Annie said carnivores ate?

**Student:** Well she said they eat other animals because they needed to do that to survive. And there was a picture of a wolf and it was going to eat a little rabbit.

**Student:** And the praying insect was eating a fly I think.

**LM:** It’s called a praying mantis class.

**Student:** And the eagle was snatching the mouse for its dinner. I feel sorry for the mouse but I know the eagle has to eat too.

**LM:** Wonderful work. It’s good to see you were all paying attention. Now Annie didn’t tell us what features a carnivore would have but who can think of some suggestions and we can add to our carnivore mind map.

**Student:** I think that maybe they would have sharp teeth. Cause when they catch their food, they would need shard teeth to kill it. And then meat is sometimes hard to chew so if their teeth were sharp it would help.

**LM:** That’s a very good suggestion. Let’s add it to our mind map. What else?

**Student:** Cheetahs eat meat. They are really fast, like the fastest animal ever. Maybe lots of carnivores are fast. But then I guess spiders eat bugs and they aren’t that fast.

**LM:** That’s a good point. Spiders eat other animals and they aren’t fast. But what else do they have which helps them catch their prey?

**Class:** Webs. Poison. Lots of legs. Fangs.

**Student.** They spin webs to catch bugs. And their webs are really strong. And when a fly lands in their web they bite it and put poison in it and the fly dies.

**Script Excerpt 2: Conclusion – Students have been asked to write some sentences to describe carnivores. *INDEPENDENT.***

**LM:** Now that you have a better understanding of what a carnivore is, I would like you to write a few sentences describing them. You will need to pretend your sentences are aimed at someone who has never heard of a carnivore before.

**Student:** Do we need to tell you every food they would eat?

**LM:** No not every food, but you might like to give a few different examples in your description.

**Student:** What about all of their different feature. Do we need to give examples of all the different types of weapons a carnivore has?

**LM:** I really like that word weapons that you used to describe their characteristics. Well done. No you don’t need to list every feature that carnivores might have. How about you each pick a different carnivore and write your sentences as if you were describing that particular carnivore to someone. That way you will only need to list what that animal eats and the features it has which help it find and catch its prey. Does anyone else have any questions?

**Class:** NO MISS KATHRYN.

*(Class begins independent work. The LM would walk around helping students when they needed it but only by using guiding questions. The students would complete this activity on their own.)*

**References**

Australian Curriculum, Assessment and Reporting Authority, (2012). *The Australian Curriculum – Science*. Version 3.0, dated January 23rd, 2012.

Bruner, J. (1996). *The culture of education*. Harvard University Press, London, England.

Gibbons, P. (2002).*Scaffolding language, scaffolding learning.* Teaching second language learners in the mainstream classroom. Heinemann, NH.

Mariani, L. (1997). *Teacher support and teacher challenge in promoting learner autonomy*. Perspectives, 23(2).

Marzano, J. & Pickering, J. (1997). *Dimensions of Learning, Teachers Manual.* (pp. 43 – 113) Colorado: Mid-continent Regional Education Laboratory.

Simmons, S. (1995, December). *Drawing as thinking*. Think Magazine, 23-29.

Wolfinger, D. M. (1984). Teaching science in the elementary school: Content, process, and attitude. Boston, MA: Little Brown and Company.

Bibliography

Dalton, J. & Smith, D. (1986). *Extending Children’s Special Abilities – Strategies for Primary Classrooms*. p36 – 39. Retrieved on Friday the 9th of September, 2011 from http://teachers.ash.org.au/researchskills/dalton.htm

Fleer, M., Beverly, J. & Hardy, T. (2007). *Science for Children : developing a personal approach to teaching* (3rd ed.). Frenchs Forests, NSW: Pearson

Frangenheim, E. (2010). *Reflections of classroom thinking strategies* (9th ed.). Loganholme, QLD; Rodin Educational Publishing

Knight, B., & Lynch, D. (2010) *Applied Learning Management: New approaches for the new millennium.* Frenchs Forests, NSW: Pearson

Knight, B., & Lynch, D. (2010) *The Theory and Practise of Learning Management: A text for the student of Learning Management.* Frenchs Forests, NSW: Pearson

Knight, B., Lynch, D., & Smith, R. (2007) *Learning Management: Transitioning teachers for national and international change.* Frenchs Forests, NSW: Pearson

Strijbos, J. W., Martens, R. L., Jochems, W. M. G., & Broers, N. J. (2004). The effect of functional roles on perceived group efficiency: using multilevel modelling and content analysis to investigate computer-supported collaboration in small groups. *Small Group Research*, 35, doi:195e229

Lynch, D. & Smith, R. (2011), *Designing the Classroom Curriculum in the Knowledge Era: Rethinking Teaching*. AACLM Press, Brisbane, Australia. (pp15-20)