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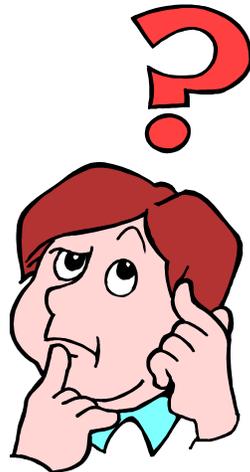
ASSESSMENT OF SCIENCE AND TECHNOLOGY ACHIEVEMENT PROJECT (ASAP)

Science and Technology Exemplars

Grade 2: Life Systems – Growth and Changes in Animals

Exemplar Task (2LSPT02/Oct 2000)

Alike or Not



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Preface

This task is one of a series developed by the Assessment of Science and Technology Achievement Project (ASAP) which is being used for the ASAP Science and Technology Exemplars Project.

This task is organised in three parts:

- A. Task Overview
- B. Student task sheet – designed to be photocopied for the students
- C. Teacher Information – providing essential information relating specifically to this task

For further information, contact the ASAP office at 416-736-5269 or email: asap@edu.yorku.ca

Task Overview

Description of the Task:



This is a culminating activity designed to assess a cluster of expectations for this grade and strand. Students should have been taught the concepts and skills required to perform this task prior to attempting it.

In this task, students will chose their own criteria to classify animals. They will cut and paste animals they think are alike and explain their reason for choosing their criteria.



Materials and Equipment Required:

paste or glue

scissors

blank paper for pasting animals

copies of sheet of animals for each student

access to information on animals i.e., internet, library books, brainstorming chart



Suggested Timeline:

3 x 40 minutes



Suggested Grouping:

Individual/pair - share



Safety Considerations:

Teacher supervision is mandatory

Students are encouraged to carry scissors by holding the cutting end in the palm of their hand

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Student Task Sheets

An alien from space has landed on earth. The alien wants to know more about the animals on earth. Help the alien by sorting these animals into groups. Answer the alien's questions about animals.

1. Look at the pictures. Tell how you will sort the animals.

2. On a separate piece of paper, cut and paste the animals into the groups you have chosen.

3. Tell why you chose your groups.

4. Is there another way to sort the animals? Explain

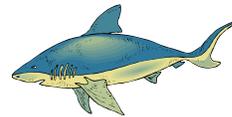
5. On your sheet, colour in the animals as follows:

- **Blue** - if the animal builds a nest
- **Red** - if the animal sleeps in winter
- **Green** - if the animal hops

6. On your sheet, draw a **circle** around the animals that have flat teeth to chew plants.

7. On your sheet, draw a **triangle** around the animals that fly.

8. Tell why the shark has fins.

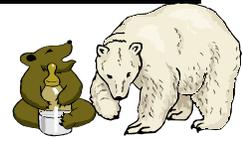




9. Tell why the rabbit has big ears.

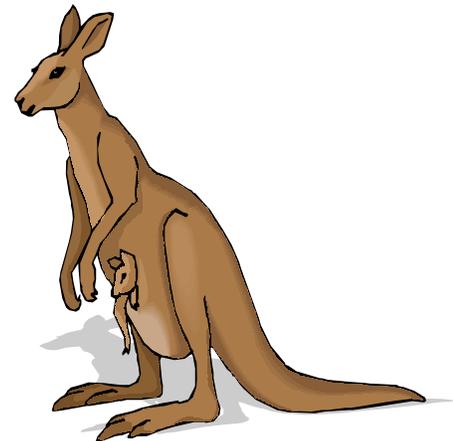
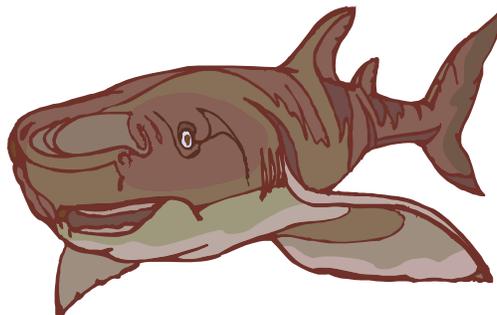
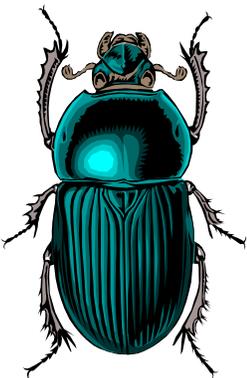
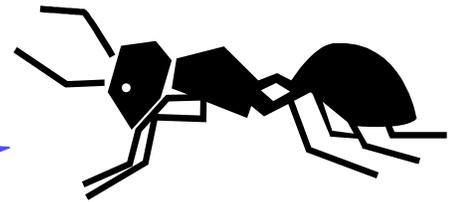
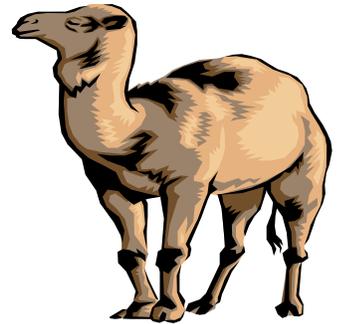
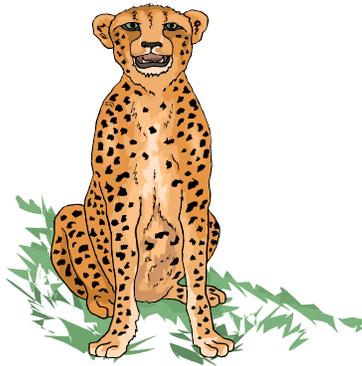
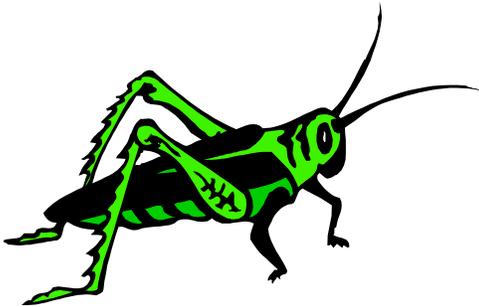
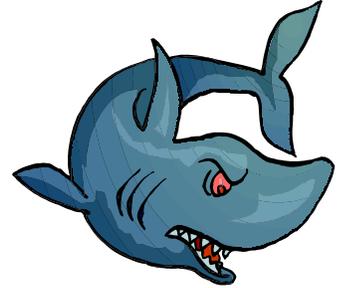
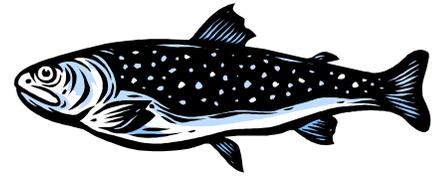


10. Tell how the Blue Jay looks after its chicks.



11. Tell how the bear looks after its cubs.

Grade 2: Alike or Not



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Grade 2: Life Systems – Growth and Changes in Animals

Exemplar Task (2LSPT02/Oct 2000)

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Teacher Information Sheets

This task addresses the following cluster of expectations. Expectations assessed by the rubric are highlighted in bold.



Understanding Basic Concepts

- **identify and describe the major physical characteristics of different types of animals (e.g., mammals, reptiles, insects)**
- **classify a variety of animals using observable characteristics (e.g., size, body covering, teeth)**
- **compare ways in which animals eat their food (e.g., tear flesh, crack shells), move, and use their environment to meet their needs (e.g., gather grass and twigs to build nests)**
- **describe ways in which animals respond and adapt to their environment (e.g., weasels change colour for camouflage in summer and winter; mammals living in colder climates have longer fur)**
- **compare ways in which different animals care for their young (e.g., bears, alligators, sea turtles)**



Developing Skills of Inquiry, Design and Communication

- **ask questions about and identify some needs of different animals with which they are familiar, and explore possible answers to these questions and ways of meeting these needs (e.g., examine different kinds of teeth explain how their shape enables an animal to bite, tear, or grind its food)**
- **use appropriate vocabulary in describing their investigations, explorations, and observations (e.g., use the words *eggs*, *caterpillar*, *larva*, *chrysalis*, and *adult* in describing the metamorphosis of a butterfly)**



Prior Knowledge Required:

Before attempting this task students should have been taught the following:

- the difference between mammals, reptiles, insects
- to identify certain animals using their species e.g., mammal reptile insects
- how different animals care for their young
- the different ways that different animals eat their food e.g., tear flesh, crack shells, chew grass, swallow food, etc.
- the different environment that different animals live in
- how some animals adapt to their changing environment e.g., some animals grow thicker coat in cold weather
- how some of these animal help the human population



Students should be familiar with the following science and technology terminology:

migration, dormancy, hibernation, characteristics,



Prior Skills Required:

Before attempting this task students should have experience of the following:

- different ways of classifying commonly found objects such as:
 - phone numbers in the phone book
 - restaurants in the community
 - footwear of children in the classrooms



Suggested Introductory Activities:

The following activities are suggested to introduce this task to the students:

Discuss different ways of sorting children in the classroom e.g., by gender, culture, race, language



Cross-strand Links:

Links can be made to Earth and Space Systems. The specific expectation that can be addressed is:

- identify ways in which changes in temperature affect living things
- Every strand in the Science and Technology document has common set of expectations clustered under the title ***Developing Skills of Inquiry, Design and Communication***. This task is therefore appropriate to assess and evaluate these skills for every Grade 2 strand.



Cross-curricular Links:

Links can be made to *The Ontario Curriculum Grades 1-8 Language Writing: Grade 2*. The expectations that could be addressed are:

- use words and pictures to create a message
- print legibly
- Math – Data Management



Reading and Writing Skills:

This task has been constructed to take into account the possible limited reading and writing skills of some students at this grade level. At the end of Grade Two students are expected to be able to write a sentence (see MET Writing Exemplars 1999). Depending on the achievement level of the children in the class and the time in the school year that this task is administered, teachers will need to take into account the diverse abilities in their classes. The task could be presented orally and evaluated through teacher/student conferences. Teachers could use the questions on the student task sheet to guide their conferences. Students could make oral presentations about their observations to the class. Their presentation could be based upon the questions outlined in the student task sheet. Grade 5/6 students could act as reading/writing buddies to read out questions and transcribe answers.



Considerations for Combined Grade Classes:

Appropriate strategies are as follows:

- Teach one grade while the other grade completes the task which does not require active teacher guidance
- Create separate learning centers for student investigation specific to each grade topic and strand. The methods of science and technology (inquiry and communication) would provide the whole class focus
- Make thematic connections by clustering the overall expectations around a unifying organizer such as “Systems”.



ALIKE OR NOT

TEACHER OBSERVATION RATING SCALE

Student Name: _____

Please number student work to correspond with the rating scale

Criterion	Score			
	1	2	3	4
Describes method of sorting the animal pictures				
Explain why the animal groups were chosen				
Suggests alternative sorting method(s)				
Use colours, circles and triangles to code the animal groupings as asked				
Suggests reasons for physical characteristics of representative animals and why they behave the way they do				

Student Name: _____
 Date: _____

Alike or Not
for use with Subtask 1: Alike or Not
 from the Grade 2 Unit:

Expectations for this Subtask to Assess with this Rubric:

- 2s4 - identify and describe the major physical characteristics of different types of animals (e.g., mammals, reptiles, insects);
- 2s6 - classify a variety of animals using observable characteristics (e.g., size, body covering, teeth);
- 2s7 - compare ways in which animals eat their food (e.g., tear flesh, crack shells), move, and use their environment to meet their needs (e.g., gather grass and twigs to build nests);

Category/Criteria	Level 1	Level 2	Level 3	Level 4
Understanding of basic concepts	<ul style="list-style-type: none"> ◆ shows understanding of few of the major physical characteristics of different kinds of animals 	<ul style="list-style-type: none"> ◆ shows understanding of some of the major physical characteristics of different kinds of animals ◆ demonstrates minor misconceptions ◆ give partial explanations 	<ul style="list-style-type: none"> ◆ shows understanding of most of the major physical characteristics of different kinds of animals ◆ demonstrates no significant misconceptions ◆ usually gives complete or nearly complete explanations 	<ul style="list-style-type: none"> ◆ shows understanding of all of the major physical characteristics of different kinds of animals ◆ demonstrates no misconceptions ◆ always give complete explanations
Inquiry and design skills	<ul style="list-style-type: none"> ◆ applies few of the required skills of classification using observable characteristics ◆ applies sorting rules only with assistance 	<ul style="list-style-type: none"> ◆ applies some of the required skills of classification using observable characteristics ◆ applies sorting rules correctly with some assistance 	<ul style="list-style-type: none"> ◆ applies most of the classification using observable characteristics ◆ applies methods of sorting with only occasional assistance 	<ul style="list-style-type: none"> ◆ applies all (or almost all) of the required skills and strategies ◆ develops and uses sorting rules correctly with little or no assistance
Communication of required knowledge	<ul style="list-style-type: none"> ◆ communicates with little clarity and precision ◆ rarely uses appropriate science and technology terminology related to characteristics of animals 	<ul style="list-style-type: none"> ◆ communicates with some clarity and precision ◆ sometimes uses appropriate science and technology terminology related to characteristics of animals 	<ul style="list-style-type: none"> ◆ generally communicates with clarity and precision ◆ usually uses appropriate science and technology terminology related to characteristics of animals 	<ul style="list-style-type: none"> ◆ consistently communicates with clarity and precision ◆ consistently uses appropriate science and technology terminology related to characteristics of animals

