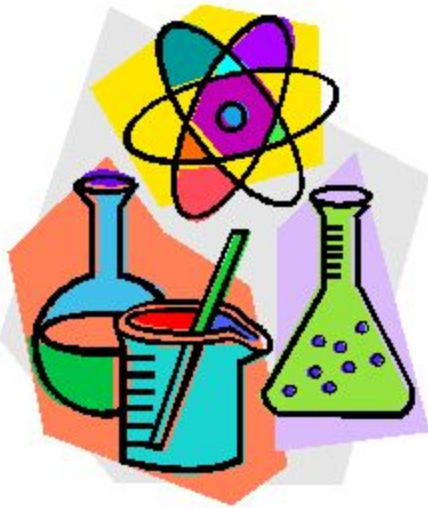


"I Can" Mascoma Science Grade 3 Curriculum



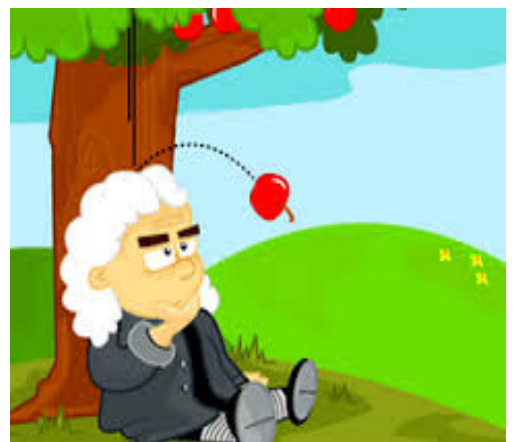
I Have Good SCIENTIFIC SKILLS

- I can observe and ask questions about scientific topics.
- I can explain a simple scientific model.

- I can plan a scientific investigation.
- I can think about data collected during a scientific investigation.
- I can explain the results of a scientific investigation.

I know about MOTION and STABILITY

- I can plan and conduct an investigation to give evidence of the effects of balanced and unbalanced forces on the motion of an object. (i.e. pushing on one side of a ball will make it start moving-unbalanced, pushing on opposite sides of a block with equal force will not cause it to move-balanced.)
- I can explain that gravity is a force that pulls objects down to the Earth.
- I can observe or take measurements of an object's motion to provide evidence to predict future motion. (limit to predictable patterns-child swinging on a swing that stops pumping, children on a see-saw, marbles rolling down a ramp (pushed and merely released), marble rolling back and forth in a bowl, etc.)



□ I can ask questions to determine cause and effect relationships of static electric or magnet interactions between two objects not touching each other. (hair and a charged balloon, tiny shreds of paper and a charged glass rod, paper clips and a magnet, two magnets that show poles – repel and attract)

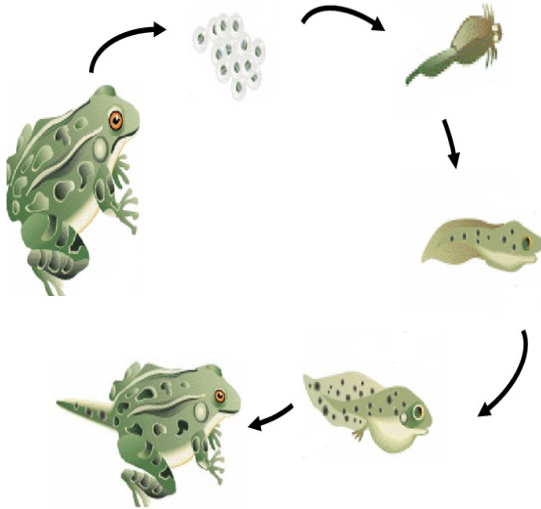
□ I can define a simple design problem that can be solved by using what I know about magnets. (i.e. keeping a door latched with a magnet)

A little primer for my teacher:

Mascoma Standards	<u>RI.3.1</u> - Ask and answer questions to demonstrate understanding.	<u>RI.3.3</u> - Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in a technical procedure, using language that pertains to time, sequence, or cause and effect.
	<u>RI.3.8</u> - Describe logical connections. (comparison, cause and effect, first-second-third in a sequence)	<u>W.3.7</u> - Conduct short research projects that build knowledge about a topic.
	<u>W.3.8</u> - Recall information from experiences or gather information from print and digital sources, take brief notes on sources, and sort evidence into provided categories.	<u>SL.3.3</u> - Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.
	<u>MP.3.5</u> - Use appropriate tools strategically	<u>MD.3.2</u> - Measure and estimate using standard units. Add, subtract, multiply or divide to solve one-step word problems that are given in the same units. Use drawings to represent the problem.
Vocabulary	Evidence, observable, variable, magnetic, poles, static, repel, attract, design, balanced, unbalanced, interaction	

I Know About MOLECULES and ORGANISMS

□ I can develop a model (diagram, drawing, physical replica, diorama, dramatization, or storyboard) to describe the life cycle of a flowering plant.



□ I can explain that organisms have unique and diverse life cycles.

□ I can explain that life cycles have birth, growth, reproduction, and death in common. (does not include the details of human reproduction)

□ I can explain why reproduction is essential to organisms so that they continue to exist.

A little primer for my teacher:

Mascoma Standards	<u>RI.3.3</u> - Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in a technical procedure, using language that pertains to time, sequence, or cause and effect.	<u>RI.3.7</u> - Use information gained from illustrations (maps, photographs) and the words in a text to demonstrate understanding of the text (when, where, why, and key events occur).
	<u>SL.3.5</u> - Create audio recording of stories or poems that demonstrate fluid reading at an understandable pace; add drawings or other visual displays when appropriate to emphasize or enhance certain facts or details.	<u>MP.2.1</u> - Reason abstractly and quantitatively.
	<u>MD.3.10</u> - Draw a picture or bar graph to represent a data set with several categories. Solve one- and two- step problems using the information presented in the graph.	
Vocabulary	Structure, survive, life cycle, unique, diverse, reproduction, exist	

I Know About ECOSYSTEMS: INTERACTIONS, ENERGY and DYNAMICS

I can explain how being part of a group can help animals obtain food or defend themselves.

I can explain why animal groups are different in size and in function.

I can explain how some animals live alone.

I can construct an argument that some animals form groups to help members survive.



A little primer for my teacher:

Mascoma Standards	<u>RI.3.1</u> - Ask and answer questions to demonstrate understanding of a text referring explicitly to the text as the basis for answers.	<u>RI.3.3</u> - Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in a technical procedure, using language that pertains to time, sequence, or cause and effect.
	<u>W.3.1</u> - Write opinion pieces on topics or texts, supporting a point of view with reasons.	<u>SL.3.5</u> - Create audio recording of stories or poems that demonstrate fluid reading at an understandable pace; add drawings or other visual displays when appropriate to emphasize or enhance certain facts or details.
Vocabulary	Herd (troop, colony, flock, band, swarm, school, pack), hunt, survive, function, lone	

I Know About HEREDITY: INHERITANCE and VARIATION of TRAITS

□ I can analyze and interpret data to provide evidence that plants and animals (only non-human examples) have traits inherited from parents.



□ I can observe and list the variations that exist in a group of similar organisms (Cats may have different colored fur, different shaped heads, single or double paws, different tail lengths, different fur lengths, different colored eyes, and still be cats).

□ I can use evidence to support the explanation that traits can be influenced by the environment (plants with

insufficient light can become stunted, under-exercised dogs can become overweight).

□ I can explain how some traits are influenced by both heredity and environment (diet, learning, etc.).

A little primer for my teacher:

Mascoma Standards	<u>RI.3.1</u> - Ask and answer questions to demonstrate understanding of a text referring explicitly to the text as the basis for answers.	<u>RI.3.3</u> - Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in a technical procedure, using language that pertains to time, sequence, or cause and effect.
	<u>W.3.3</u> - write informative/ explanatory texts to examine a topic and ideas and information clearly.	<u>SL.3.4</u> - Report on a topic or text with appropriate facts and relevant, descriptive details, speaking clearly and at an understandable pace.
	<u>MP.2.1</u> - Reason abstractly and quantitatively.	<u>MP.3.4</u> - Model with mathematics
Vocabulary	Trait, inherited, variation, environmental influence, heredity	

I Know About BIOLOGICAL UNITY and DIVERSITY

I can analyze and interpret data from fossils to provide evidence of the organisms that lived long ago.

I can analyze and interpret data from fossils to provide evidence of the environments in which ancient organisms existed.

I can use evidence to construct an explanation for how the variations in characteristics among individuals in the same species may provide advantages in surviving, finding mates, and reproducing. (Survival of the Fittest- plants with the largest thorns are least likely to be eaten by predators, animals with the best camouflage are most likely to survive to reproduce)

I can categorize a given set of organisms into 3 groups when faced with an environmental change: those likely to move to another area, those likely to adapt to the changed area, those that will likely die.



I can provide evidence from provided sources about the type of organisms and environments that existed long ago.

I can construct an argument with evidence that in a certain habitat some organisms can survive well, some survive less well, and some cannot survive at all (In a forest, a bear would survive well, a goat would survive less well, and a fish would not survive at all).

I can make a claim about the merits of a solution to a problem caused when the environment changes (limited to one change-water distribution, food,

temperature, introduction of foreign organisms) and the types of plants and animals that live there may change.

□ I can explain extinction and provide examples of organisms that are extinct.

A little primer for my teacher:

Mascoma Standards	<u>RI.3.1</u> - Ask and answer questions to demonstrate understanding of a text referring explicitly to the text as the basis for answers.	<u>RI.3.2</u> - Determine the main idea of a text, recount the key details, and explain how they support the main idea.
	<u>RI.3.3</u> - Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in a technical procedure, using language that pertains to time, sequence, or cause and effect.	<u>W.3.1</u> - write opinion pieces on topics or texts, supporting a point of view with reasons.
	<u>W.3.3</u> - write informative/ explanatory texts to examine a topic and ideas and information clearly.	<u>W.3.8</u> - Recall information from experiences or gather information from print and digital sources, take brief notes on sources and sort evidence into provided categories.
	<u>SL.3.4</u> - Report on a topic or text with appropriate facts and relevant, descriptive details, speaking clearly and at an understandable pace.	<u>MP.3.1</u> - Reason abstractly and quantitatively.
	<u>MP.3.5</u> - Use appropriate tools strategically.	<u>MD.3.8</u> - Draw a picture or bar graph to represent a data set with several categories. Solve one- and two- step problems using the information presented in the graph.
Vocabulary	Change, survival, adaptation, migrate, extinct, fittest, fossils	

I Know About EARTH SYSTEMS: WEATHER and CLIMATE

- I can represent data in tables and graphic displays to describe typical weather conditions during a particular season (temperature, precipitation and wind information).

Month: April		Date of first record: April 12, 2000					
Weather Observations	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat
	Dark clouds. Light wind. Small rain showers on and off all day. Cool.	Very light rain shower in the morning. grey sky. Strong wind from the East.	Clear sky. very strong wind from the East.	Very sunny and warm. Small fluffy clouds. No wind.	Sunny in the morning, dark clouds in the afternoon and short but heavy rainfall.	Grey sky. Light wind all day.	Mix of sun and clouds all day. Light wind from the East.
Temperature (to Celsius)	H 12°C	13°C	12°C	17°C	14°C	11°C	11°C
	L 5°C	4°C	4°C	7°C	4°C	3°C	2°C
Rain or Snowfall (cm.)	2.0 cm. R	0.5 cm. R	0 cm.	0 cm.	1.0 cm. R	0 cm.	0 cm.

- I can obtain and combine information to describe climates in different regions in the world.
- I can explain the difference between climate and weather.

- I can explain the elements of weather that are used to forecast or predict the weather for a span of several days.

- I can describe (and use) several of the instruments that weather forecasters use (thermometer, anemometer, rain gauge, barometer, Doppler radar).

A little primer for my teacher:

Mascoma Standards	<u>RI.3.1</u> - Ask and answer questions to demonstrate understanding of a text referring explicitly to the text as the basis for answers.	<u>RI.3.9</u> - Compare and contrast the most important points and key details presented in two texts on the same topic.
	<u>W.3.8</u> - Recall information from experiences or gather information from print and digital sources, take brief notes on sources and sort evidence into provided categories.	<u>MP.3.2</u> - Reason abstractly and quantitatively
	<u>MP.3.5</u> - Use appropriate tools strategically.	<u>MD.3.8</u> - Draw a picture or bar graph to represent a data set with several categories. Solve one- and two- step problems using the information presented in the graph.
Vocabulary	Climate, region, barometer, anemometer, radar, forecast	

I Know About EARTH and HUMAN ACTIVITY

□ I can make a claim about the merit of a design solution that reduces the impact of a weather related hazard.

□ I can explain that there are a variety of natural hazards that humans cannot eliminate, but they can take steps to reduce their impact (prediction, preparation, evacuation).

□ I can share my opinion on the influence of engineering, science and technology on the natural world (Prediction and protection from tsunamis, hurricanes, earthquakes and tornadoes, avalanches, blizzards, floods, droughts and brush fires).



A little primer for my teacher:

Mascoma Standards	<u>W.3.1</u> - write opinion pieces on topics or texts, supporting a point of view with reasons.	<u>W.3.7</u> - Conduct short research projects that build knowledge about a topic.
	<u>MP.3.2</u> - Reason abstractly and quantitatively	<u>MP.3.4</u> - Model with mathematics
Vocabulary	Engineer, design, solution, hazards, impact, evacuation	