



# Mystery Science Alignment with the The Ontario Curriculum: Science & Technology (2007)

#### **Mystery Science - Ontario Alignment**

Mystery Science aligns to The Ontario Curriculum: Science & Technology (2007). Each lesson (exploration & activity) is designed to take one hour per week. Mini-lessons are 5-minute videos that answer K-5 student questions and can be used as a jumping off point to engage learners for a full lesson planned by the teacher.

**Lesson Extensions.** Extensions are available for each lesson and offer an opportunity for students to continue their science content learning. They include assessments and a curated collection of additional activity suggestions, online resources, project ideas, and readings to help extend the learning.

	Table of Contents					
Grade 1	<u>Life Systems</u>	Structures & Mechanisms	Matter & Energy	Earth & Space Systems		
Grade 2	<u>Life Systems</u>	Structures & Mechanisms	Matter & Energy	Earth & Space Systems		
Grade 3	Life Systems	Structures & Mechanisms	Matter & Energy	Earth & Space Systems		
Grade 4	<u>Life Systems</u>	Structures & Mechanisms	Matter & Energy	Earth & Space Systems		
Grade 5	Life Systems	Structures & Mechanisms	Matter & Energy	Earth & Space Systems		
Grade 6	Life Systems	Structures & Mechanisms	Matter & Energy	Earth & Space Systems		





Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 1, students will	Mystery Science Unit	Mystery Science Lessons
		1. assess the role of humans in maintaining a healthy environment.		
St		2. investigate needs and characteristics of plants and animals, including humans.	Plant & Animal Secrets	Lesson 1: Why do woodpeckers peck wood? Lesson 2, Read-Along: Where do animals live? Lesson 3: How can you find animals in the woods?
Life Systems	Needs & Characteristics of Living Things	demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.		Lesson 4, Read-Along: How do animals in the woods? homes in the forest? Lesson 5: How do plants and trees grow? Lesson 6, Read-Along: Why would you want an old log in your backyard?
			Plant & Animal Superpowers	Lesson 5: Why don't trees blow down in the wind? Lesson 6, Read-Along: What do sunflowers do when you're not looking?
& S		assess the impact on people and the environment of objects and structures and the materials used in them.		
tures anism	Materials, Objects, and Everyday	2. investigate structures that are built for a specific purpose to see how their design and materials suit the purpose.		Lesson 1: Why do we wear clothes?
Structures & Mechanisms	Structures	3. demonstrate an understanding that objects and structures have observable characteristics and are made from materials with specific properties that determine how they are used.	Material Magic	Lesson 4: What materials might be invented in the future? Lesson 5: Could you build a house out of paper?





#### Grade 1, continued

Strand	Topic	The Ontario Curriculum Expectations By the end of grade 1, students will	Mystery Science Unit	Mystery Science Lessons
		assess uses of energy at home, at school, and in the community, and suggest ways to use less energy.		
rgy	7gy	2. investigate how different types of energy are used in daily life.	<u>Weather</u> <u>Watching</u>	Lesson 5: How could you warm up a frozen playground? Lesson 6, Read-Along: How could you walk barefoot across hot pavement
Matter & Energy	Energy in Our Lives	3. demonstrate an understanding that energy is something that is needed to make things happen, and that the sun is the principal source of energy for the Earth.	<u>Lights &amp;</u> <u>Sounds</u>	Lesson 1: How do you make silly sounds in cartoons? Lesson 2, Read-Along: Where do sounds come from? Lesson 3: What if there were no windows? Lesson 4, Read-Along: Can you see in the dark? Lesson 5: How could you send a secret message to someone far away? Lesson 6, Read-Along: How do boats find their way in the fog?





#### Grade 1, continued

Strand	Topic	The Ontario Curriculum Expectations By the end of grade 1, students will	Mystery Science Unit	Mystery Science Lessons
Systems		assess the impact of daily and seasonal changes on living things, including humans.	Weather Watching	Lesson 1: Have you ever watched a storm? Lesson 2, Read-Along: How can you get ready for a big storm? Lesson 3: What will the weather be like on your birthday? Lesson 4, Read-Along: How do you know what to wear for the weather?
& Space	Daily & Seasonal Changes	2. investigate daily and seasonal changes.	Spinning Sky	Lesson 1: Could a statue's shadow move? Lesson 2, Read-Along: What does your shadow do when you're not looking? Lesson 3: How can the sun help you if you're lost? Lesson 4, Read-Along: Why do you have to go to bed early in the summer? Lesson 5: Why do the stars come out at night? Lesson 6, Read-Along: How can stars help you if you get lost?
Earth		3. demonstrate an understanding of what daily and seasonal changes are and of how these changes affect living things.	Mini-lessons	Mini-lesson: Why do bears hibernate?** Mini-lesson: Why do leaves change color in the fall?** Mini-lesson: Where do bugs go in winter? Mini-lesson: Why do animals come back after going to warm places in winter? Mini-lesson: Why do birds lay eggs in the spring?

<sup>\*\*</sup> Indicates a mini-lesson with an included hands-on step-by-step STEAM activity from Mystery Science.





	Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 2, students will	Mystery Science Unit	Mystery Science Lessons
			1. assess ways in which animals have an impact on society and the environment, and ways in which humans have an impact upon animals and the places where they live.	Plant & Animal Superpowers	Lesson 1: Why do birds have beaks? Lesson 2, Read Along: Why do baby ducks follow their mother? Lesson 3: Why are polar bears white? Lesson 4, Read Along: Why do family members look alike?
	Systems	Growth & Changes in Animals	investigate similarities and differences in the characteristics of various animals.	Animal Adventures	Lesson 1: How many different kinds of animals are there? Lesson 2: Why do frogs say "ribbit?" Lesson 3: How could you get more birds to visit a bird feeder?
	Life Sys	Animais	3. demonstrate an understanding that animals grow and change and have distinct characteristics.	Mini-lessons	Mini-lesson: What's that red thing on a turkey?** Mini-lesson: What is the biggest spider in the world?** Mini-lesson: Why are butterflies so colorful?** Mini-lesson: What's the most dangerous animal in the world?
ĺ	S		assess the impact on society and the environment of simple machines and mechanisms.		Lesson 1: What's the biggest excavator?
	Structures & Mechanisms		2. investigate mechanisms that include simple machines and enable movement.	<u>Force</u>	Lesson 2, Read-Along: Why do builders need so many big machines? Lesson 3: How can you knock down a wall made of concrete?
		Movement	3. demonstrate an understanding of movement and ways in which simple machines help to move objects.	Olympics*	Lesson 4, Read-Along: How can you knock down the most bowling pins? Lesson 5: How can we protect a mountain town from falling rocks? Lesson 6, Read-Along: How could you invent a trap?

<sup>\*</sup> Force Olympics was initially developed for Kindergarten. Modifications can be made to teach this unit in Grade 2. Expect aspects of this unit to be simplified for a younger audience.



<sup>\*\*</sup> Indicates a mini-lesson with an included hands-on step-by-step STEAM activity from Mystery Science.



#### Grade 2, continued

Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 2, students will	Mystery Science Unit	Mystery Science Lessons
Ϋ́E		assess ways in which the uses of liquids and solids can have an impact on society and the environment.		
Matter Energy	Properties of Liquids and Solids	2. investigate the properties of and interactions among liquids and solids.	<u>Material</u> <u>Magic</u>	Lesson 2: Can you really fry an egg on a hot sidewalk? Lesson 3: Why are so many toys made out of plastic?
≥ –		3. demonstrate an understanding of the properties of liquids and solids.		
		1. assess ways in which the actions of humans have an impact on the quality of air and water, and ways in which the quality of air and water has an impact on living things.	Work of	Lesson 1: If you floated down a river, where would you end up? Lesson 2: Why is there sand at the beach?
Earth & Space Systems	Air & Water in the Environment	2. investigate the characteristics of air and water and the visible/ invisible effects of and changes to air and/or water in the environment.	Water Stormy Skies	Lesson 3: What's strong enough to make a canyon? Lesson 4: How can you stop a landslide?  Lesson 1: Where do clouds come from? Lesson 2: How can we predict when it's going to storm? Lesson 3: Why are some places always hot?* Lesson 4: How can you keep a house from blowing away in a windstorm?
		3. demonstrate an understanding of the ways in which air and water are used by living things to help them meet their basic needs.		

<sup>\* &</sup>lt;u>Stormy Skies</u> was originally developed for Grade 3. Modifications can be made to teach this unit in Grade 2. Lesson 3 covers the topic of global climate patterns, but is included here for completeness of the unit. Aspects of this unit may need to be modified for a younger audience.





Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 3, students will	Mystery Science Unit	Mystery Science Lessons
Su		assess ways in which plants have an impact on society and the environment, and ways in which human activity has an impact on plants and habitats;	Plant Adventures	Lesson 1: How did a tree travel halfway around the world? Lesson 2: Could a plant survive without light? Lesson 3: Why do trees grow so tall? Lesson 4: Should you water a cactus? Lesson 5: Where do plants grow best?
Life Systems	Growth & Changes in Plants	2. investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow.	Power of Flowers*	Lesson 1: Why do plants grow flowers? Lesson 2: Why do plants give us fruit? Lesson 3: Why are some apples red and some green? Lesson 4: How could you make the biggest fruit in the world?
ב		3. demonstrate an understanding that plants grow and change and have distinct characteristics.	Mini-lessons	Mini-lesson: How do flowers bloom in the spring?** Mini-lesson: What's the biggest apple in the world?** Mini-lesson: What's the biggest tree in the world?
SL		assess the importance of form, function, strength, and stability in structures through time.		
Structures Mechanisms	Strong & Stable	2. investigate strong and stable structures to determine how their design and materials enable them to perform their load-bearing function.	Invisible Forces	Lesson 2: What makes bridges so strong?
Stri & Med	Structures	3. demonstrate an understanding of the concepts of <b>structure</b> , <b>strength</b> , and <b>stability</b> and the factors that affect them.	101000	

<sup>\*</sup> Power of Flowers picks up where Plant Adventures leaves off. We suggest that you teach Plant Adventures first.



<sup>\*\*</sup> Indicates a mini-lesson with an included hands-on step-by-step STEAM activity from Mystery Science.



### Grade 3, continued

Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 3, students will	Mystery Science Unit	Mystery Science Lessons
		assess the impact of various forces on society and the environment		
Matter Energy	Forces Causing Movement	investigate devices that use forces to create controlled movement.	<u>Invisible</u>	Lesson 1: How could you win a tug-of-war against a bunch of adults? Lesson 2: What makes bridges so strong?
•ŏ		demonstrate an understanding of how forces cause movement and changes in movement.	<u>Forces</u>	Lesson 3: How can you go faster down a slide? Lesson 4: What can magnets do? Lesson 5: How can you unlock a door using a magnet?
Space		assess the impact of soils on society and the environment, and of society and the environment on soils.		
% #	Soils & The Environment	2. investigate the composition of different soils.		
Earth Sys		<b>3.</b> demonstrate an understanding of the composition of soils, the types of soils, and the relationship between soils and other living things.		





Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 4, students will	Mystery Science Unit	Mystery Science Lessons
ms		analyse the effects of human activities on habitats and communities.	<u>Animals</u>	Lesson 1: Where can you find whales in a desert? Lesson 2: How do we know what dinosaurs looked like? Lesson 4: What kind of animals might there be in the future? Lesson 5: Can selection happen without people? Lesson 6: Why do dogs wag their tails?
ife Systems	Habitats & Communities	2. investigate the interdependence of plants and animals within specific habitats and communities.	Through Time	Lesson 6: Why do dogs wag their tails? Lesson 7: What's the best way to get rid of mosquitoes? Lesson 8: How long can people (and animals) survive in outer space?
1		3. demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them	Web of Life	Lesson 1: Why would a hawk move to New York City? Lesson 2: What do plants eat? Lesson 3: Where do fallen leaves go? Lesson 4: Do worms really eat dirt? Lesson 5: Why do you have to clean a fish tank but not a pond? Lesson 6: Why did the dinosaurs go extinct?
s ms		evaluate the impact of pulleys and gears on society and the environment		
Structures Mechanisms	Pulleys & Gears	2. investigate ways in which pulleys and gears modify the speed and direction of, and the force exerted on, moving objects.		
Str & Me		<b>3.</b> demonstrate an understanding of the basic principles and functions of pulley systems and gear systems.		





### Grade 4, continued

Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 4, students will	Mystery Science Unit	Mystery Science Lessons
,		assess the impact on society and the environment of technological innovations related to light and sound.		
Matter · Energy	Light & Sound	2. investigate the characteristics and properties of light and sound.	Waves of Sound	Lesson 1: How far can a whisper travel? Lesson 2: What would happen if you screamed in outer space? Lesson 3: Why are some sounds high and some sounds low?
_ ∞		demonstrate an understanding of light and sound as forms of energy that have specific characteristics and properties.		
		assess the social and environmental impacts of human uses of rocks and minerals.		
Space		2. investigate, test, and compare the physical properties of rocks and minerals.		
Earth & Spa Systems	Rocks & Minerals	demonstrate an understanding of the physical properties of rocks and minerals.	The Birth of Rocks	Lesson 1: Could a volcano pop up where you live? Lesson 2: Why do some volcanoes explode? Lesson 3: Will a mountain last forever? Lesson 4: How could you survive a landslide?
			Mini-lessons	Mini-lesson: Why does this rock look like a sponge? Mini-lesson: How are diamonds made?





Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 5, students will	Mystery Science Unit	Mystery Science Lessons
		analyse the impact human activities and technological innovations on human health.		
		2. investigate the structure and function of the major organs of various human body systems.	Human	Lesson 1: Why do your biceps bulge? Lesson 2: What do people who are blind see? Lesson 3: How can some animals see in the dark?
Life Systems	Human Organ Systems	3. demonstrate an understanding of the structure and function of human body systems and interactions within and between systems.	Machine  Mini-lessons	Lesson 3: How can some aritmas see in the dark? Lesson 4: How does your brain control your body?  Mini-lesson: Why do our skeletons have so many bones?** Mini-lesson: What would happen if you didn't have a skull?** Mini-lesson: How does your heart pump blood?** Mini-lesson: Why do we need blood? Mini-lesson: How do broken bones heal? Mini-lesson: Why do we sweat when we play sports? Mini-lesson: Why do you get goosebumps when you're cold? Mini-lesson: Why do we get hiccups? Mini-lesson: Why do we yawn? Mini-lesson: Why do we have eyebrows?
s & ms	<i></i>	analyse social and environmental impacts of forces acting on structures and mechanisms.		
ture	Forces Acting on Structures &	2. investigate forces that act on structures and mechanisms.		
Structures & Mechanisms	Mechanisms	identify forces that act on and within structures and mechanisms, and describe the effects of these forces on structures and mechanisms.		

<sup>\*\*</sup> Indicates a mini-lesson with an included hands-on step-by-step STEAM activity from Mystery Science.





#### Grade 5, continued

Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 5, students will	Mystery Science Unit	Mystery Science Lessons
		evaluate the social and environmental impacts of processes used to make everyday products.		
Matter Energy	Properties & Changes in Matter	conduct investigations that explore the properties of matter and changes in matter.	Chemical	Lesson 1: Are magic potions real? Lesson 2: Could you transform something worthless into gold? Lesson 3: What would happen if you drank a glass of acid?
Mat & En	Matter	3. demonstrate an understanding of the properties of matter, changes of state, and physical and chemical change.  Chemical Magic	Lesson 4: What do fireworks, rubber, and Silly Putty have in common? Lesson 5: Why do some things explode?	
Space Systems	Conservation	analyse the immediate and long-term effects of energy and resource use on society and the environment, and evaluate options for conserving energy and resources.	Energizing Everything  Watery Planet*	Lesson 8: Where does energy come from?  Lesson 1: How much water is in the world?  Lesson 2: When you turn on the faucet, where does the water come from?  Lesson 3: Can we make it rain?  Lesson 4: How can you save a town from a hurricane?
Earth & Sp	of Energy & Resources	2. investigate energy transformation and conservation.	<u>Energizing</u>	Lesson 1: How is your body similar to a car? Lesson 2: What makes roller coasters go so fast? Lesson 3: Why is the first hill of a roller coaster always the highest? Lesson 4: Could you knock down a building using only
ŭ		3. demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.	Everything	dominoes?  Lesson 5: Can you build a chain reaction machine?  Lesson 7: How long did it take to travel across the country before cars and planes?  Lesson 8: Where does energy come from?

<sup>\*</sup>Watery Planet includes Lessons 1 and 2, which are focused on freshwater resources. Lessons 3 and 4 focus more on the water cycle and natural disasters, but are included here for completeness.





Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 6, students will	Mystery Science Unit	Mystery Science Lessons
Life Systems	Biodiversity	assess human impacts on biodiversity, and identify ways of preserving biodiversity.		
		2. investigate the characteristics of living things, and classify diverse organisms according to specific characteristics.	<u>Mini-lessons</u>	Mini-lesson: How can you tell if a mushroom is poisonous? Mini-lesson: What's the biggest tree in the world? Mini-lesson: What's the biggest apple in the world?** Mini-lesson: What's the biggest spider in the world?**
		3. demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans.		
Structures & Mechanisms	Flight	assess the societal and environmental impacts of flying devices that make use of properties of air.		
		2. Investigate ways in which flying devices make use of properties of air.	<u>Mini-lessons</u>	Mini-lesson: Why can't airplanes fly to space?**
		explain ways in which properties of air can be applied to principles of flight and flying devices.		



<sup>\*\*</sup> Indicates a mini-lesson with an included hands-on step-by-step STEAM activity from Mystery Science.



### Grade 6, continued

Strand	Topic	The Ontario Curriculum Expectations  By the end of grade 6, students will	Mystery Science Unit	Mystery Science Lessons
Matter & Energy	Electricity & Electrical Devices	evaluate the impact of the use of electricity on both the way we live and the environment.	Energizing	Lesson 6: What if there were no electricity?  Mini-lesson: How do batteries work?
		investigate the characteristics of static and current electricity; and construct simple circuits.	<u>Everything</u>	
		3. demonstrate an understanding of the principles of electrical energy and its transformation into and from other forms of energy.	Mini-lessons	
Earth & Space Systems	Space	assess the impact of space exploration on society and the environment;		
		2. investigate characteristics of the systems of which the earth is a part and the relationship between the earth, the sun, and the moon.		Lesson 1: How fast does the Earth spin? Lesson 2: Who set the first clock? Lesson 3: How can the Sun tell you the season? Lesson 4: Why do the stars change with the seasons? Lesson 5: Why does the Moon change shape? Lesson 6: What are the wandering stars? Lesson 7: Why is gravity different on other planets? Lesson 8: Could there be life on other planets?
			Spaceship Earth	
		3. demonstrate an understanding of components of the systems of which the earth is a part, and explain the phenomena that result from the movement of different bodies in space.	Mini-lessons	Mini-lesson: What is a black hole? Mini-lesson: Why is mars red? Mini-lesson: Is Earth the only planet with life? Mini-lesson: Is Pluto a planet? Mini-lesson: Why isn't Pluto a (major) planet anymore? Mini-lesson: Has a shooting star ever landed on someone? Mini-lesson: Who created the constellations?

