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.

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Grade 1

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 1, students will...*	Mystery Science Unit	Mystery Science Lessons
Life Systems	*Needs & Characteristics of Living Things*	**1.** assess the role of humans in maintaining a healthy environment.		
		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? **Lesson 4, Read-Along:** How do animals make their 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?
		3. demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.	Plant & Animal Superpowers	**Lesson 6:** Why don't trees blow down in the wind? **Lesson 7, Read-Along:** What do sunflowers do when you're not looking?
Structures & Mechanisms	*Materials, Objects, and Everyday Structures*	**1.** assess the impact on people and the environment of objects and structures and the materials used in them.		
		2. investigate structures that are built for a specific purpose to see how their design and materials suit the purpose.	Material Magic	**Lesson 1:** Why do we wear clothes? **Lesson 4:** What materials might be invented in the future? **Lesson 5:** Could you build a house out of paper?
		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.		

Grade 1, continued

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 1, students will...*	Mystery Science Unit	Mystery Science Lessons
Matter & Energy	*Energy in Our Lives*	**1.** assess uses of energy at home, at school, and in the community, and suggest ways to use less energy.		
		2. investigate how different types of energy are used in daily life.	Sunny Skies	**Lesson 1, Read-Along:** How could you walk barefoot across hot pavement without burning your feet? **Lesson 2:** How could you warm up a frozen playground? **Lesson 3:** Why does it get cold in winter?
		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.	Lights & Sounds	**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

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 1, students will...*	Mystery Science Unit	Mystery Science Lessons
Earth & Space Systems	*Daily & Seasonal Changes*	**1.** assess the impact of daily and seasonal changes on living things, including humans.	Wild Weather	**Lesson 1, Read-Along:** How can you get ready for a big storm? **Lesson 2:** Have you ever watched a storm? **Lesson 3:** How many different kinds of weather are there?
		2. investigate daily and seasonal changes.	Circle of Seasons	**Lesson 1, Read-Along:** How do you know what to wear for the weather? **Lesson 2:** What would the weather be like on your birthday? **Lesson 3:** Why do birds lay eggs in the spring?
		3. demonstrate an understanding of what daily and seasonal changes are and of how these changes affect living things.	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:** When can you see the full moon? **Lesson 6:** Why do the stars come out at night? **Lesson 7, Read-Along:** How can stars help you if you get lost?
			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?

** Indicates a mini-lesson with an included hands-on step-by-step STEAM activity from Mystery Science.

Grade 2

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 2, students will...*	Mystery Science Unit	Mystery Science Lessons
Life Systems	*Growth & Changes in Animals*	**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. **2.** investigate similarities and differences in the characteristics of various animals. **3.** demonstrate an understanding that animals grow and change and have distinct characteristics.	Plant & Animal Superpowers Animal Adventures Mini-lessons	**Lesson 1:** How can you help a lost baby animal find its parents? **Lesson 2:** Why do birds have beaks? **Lesson 3, Read Along:** Why do baby ducks follow their mother? **Lesson 4:** Why are polar bears white? **Lesson 5, Read Along:** Why do family members look alike? **Lesson 1:** How many different kinds of animals are there? **Lesson 2:** Why would a wild animal visit a playground? **Lesson 3:** Why do frogs say "ribbit?" **Lesson 4:** How could you get more birds to visit a bird feeder? **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?
Structures & Mechanisms	*Movement*	**1.** assess the impact on society and the environment of simple machines and mechanisms. **2.** investigate mechanisms that include simple machines and enable movement. **3.** demonstrate an understanding of movement and ways in which simple machines help to move objects.	Force Olympics*	**Lesson 1:** What's the biggest excavator? **Lesson 2, Read-Along:** Why do builders need so many big machines? **Lesson 3:** How can you knock down a wall made of concrete? **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?

* 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.

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Grade 2, continued

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 2, students will...*	Mystery Science Unit	Mystery Science Lessons
Matter & Energy	*Properties of Liquids and Solids*	**1.** assess ways in which the uses of liquids and solids can have an impact on society and the environment.	Material Magic	**Lesson 2:** Can you really fry an egg on a hot sidewalk? **Lesson 3:** Why are so many toys made out of plastic?
		2. investigate the properties of and interactions among liquids and solids.		
		3. demonstrate an understanding of the properties of liquids and solids.		
Earth & Space Systems	*Air & Water in the Environment*	**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 Water	**Lesson 1:** If you floated down a river, where would you end up? **Lesson 2:** Why is there sand at the beach? **Lesson 4:** What's strong enough to make a canyon? **Lesson 5:** How can you stop a landslide?
		2. investigate the characteristics of air and water and the visible/ invisible effects of and changes to air and/or water in the environment.	Stormy Skies	**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.		

* Stormy Skies 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.

Grade 3

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 3, students will...*	Mystery Science Unit	Mystery Science Lessons
Life Systems	*Growth & Changes in Plants*	**1.** 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?
		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?
		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?
Structures & Mechanisms	*Strong & Stable Structures*	**1.** assess the importance of form, function, strength, and stability in structures through time.	Invisible Forces	**Lesson 2:** What makes bridges so strong?
		2. investigate strong and stable structures to determine how their design and materials enable them to perform their load-bearing function.		
		3. demonstrate an understanding of the concepts of ***structure, strength,*** and ***stability*** and the factors that affect them.		

* Power of Flowers picks up where Plant Adventures leaves off. We suggest that you teach Plant Adventures first.

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Grade 3, continued

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 3, students will...*	Mystery Science Unit	Mystery Science Lessons
Matter & Energy	*Forces Causing Movement*	**1.** assess the impact of various forces on society and the environment		
		2. investigate devices that use forces to create controlled movement.	Invisible Forces	**Lesson 1:** How could you win a tug-of-war against a bunch of adults? **Lesson 2:** What makes bridges so strong? **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?
		3. demonstrate an understanding of how forces cause movement and changes in movement.		
Earth & Space Systems	*Soils & The Environment*	**1.** assess the impact of soils on society and the environment, and of society and the environment on soils.	Work of Water	**Lesson 3:** Where do flash floods happen?
		2. investigate the composition of different soils.	Material Magic	**Lesson 6:** How do you build a city out of mud?
		3. demonstrate an understanding of the composition of soils, the types of soils, and the relationship between soils and other living things.		

Grade 4

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 4, students will...*	Mystery Science Unit	Mystery Science Lessons
Life Systems	*Habitats & Communities*	**1.** analyse the effects of human activities on habitats and communities.	Animals Through Time	**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? **Lesson 7:** What's the best way to get rid of mosquitoes? **Lesson 8:** How long can people (and animals) survive in outer space?
		2. investigate the interdependence of plants and animals within specific habitats and communities.		
		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?
Structures & Mechanisms	*Pulleys & Gears*	**1.** evaluate the impact of pulleys and gears on society and the environment		
		2. investigate ways in which pulleys and gears modify the speed and direction of, and the force exerted on, moving objects.		
		3. demonstrate an understanding of the basic principles and functions of pulley systems and gear systems.		

Grade 4, continued

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 4, students will...*	Mystery Science Unit	Mystery Science Lessons
Matter & Energy	*Light & Sound*	**1.** assess the impact on society and the environment of technological innovations related to 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?
		2. investigate the characteristics and properties of light and sound.		
		3. demonstrate an understanding of light and sound as forms of energy that have specific characteristics and properties.		
Earth & Space Systems	*Rocks & Minerals*	**1.** assess the social and environmental impacts of human uses of rocks and minerals.		
		2. investigate, test, and compare the physical properties of rocks and minerals.		
		3. demonstrate an understanding of the physical properties of rocks and minerals.	The Birth of Rocks Mini-lessons	**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-lesson**: Why does this rock look like a sponge? **Mini-lesson:** How are diamonds made?

Grade 5

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 5, students will...*	Mystery Science Unit	Mystery Science Lessons
Life Systems	*Human Organ Systems*	**1.** 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 Machine Mini-lessons	**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? **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?
		3. demonstrate an understanding of the structure and function of human body systems and interactions within and between systems.		
Structures & Mechanisms	*Forces Acting on Structures & Mechanisms*	**1.** analyse social and environmental impacts of forces acting on structures and mechanisms.		
		2. investigate forces that act on structures and mechanisms.		
		3. identify forces that act on and within structures and mechanisms, and describe the effects of these forces on structures and mechanisms.		

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Grade 5, continued

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 5, students will...*	Mystery Science Unit	Mystery Science Lessons
Matter & Energy	*Properties & Changes in Matter*	**1.** evaluate the social and environmental impacts of processes used to make everyday products.		
		2. conduct investigations that explore the properties of matter and changes in matter.	Watery Planet	**Lesson 1:** How much salt is in the ocean?
		3. demonstrate an understanding of the properties of matter, changes of state, and physical and chemical change.	Chemical Magic	**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? **Lesson 4:** What do fireworks, rubber, and Silly Putty have in common? **Lesson 5:** Why do some things explode?
Earth & Space Systems	*Conservation of Energy & Resources*	**1.** 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 3:** When you turn on the faucet, where does the water come from? **Lesson 4:** Can we make it rain? **Lesson 5:** How can you save a town from a hurricane?
		2. investigate energy transformation and conservation.	Energizing Everything	**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 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?
		3. demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.		

*Watery Planet includes Lessons 1 and 3, which are focused on freshwater resources. Lessons 4 and 5 focus more on the water cycle and natural disasters, but are included here for completeness.

Grade 6

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Strand	Topic	The Ontario Curriculum Expectations *By the end of grade 6, students will...*	Mystery Science Unit	Mystery Science Lessons
Life Systems	*Biodiversity*	**1.** 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.	Mini-lessons	**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*	**1.** 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.	Mini-lessons	**Mini-lesson:** Why can't airplanes fly to space?**
		3. explain ways in which properties of air can be applied to principles of flight and flying devices.		

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Grade 6, continued

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Matter & Energy	*Electricity & Electrical Devices*	**1.** evaluate the impact of the use of electricity on both the way we live and the environment.	Energizing Everything	**Lesson 6:** What if there were no electricity?
		2. investigate the characteristics of static and current electricity; and construct simple circuits.		
		3. demonstrate an understanding of the principles of electrical energy and its transformation into and from other forms of energy.	Mini-lessons	**Mini-lesson:** How do batteries work?
Earth & Space Systems	*Space*	**1.** 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.	Spaceship Earth	**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?
		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?