Mystery Science Alignment with British Columbia's Science Curriculum

Mystery Science - British Columbia's Science Curriculum
Mystery Science aligns to British Columbia's Science Curriculum. 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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Kindergarten

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Plants and animals have observable features.	• **basic needs** of plants and animals	Plant & Animal Secrets	Grade K	**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?
	• **adaptations** of local **plants** and **animals**			
	• **local First Peoples uses** of plants and animals			
Humans interact with matter every day through familiar materials.	• **properties** of **familiar materials**			

Kindergarten, continued

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
The motion of objects depend on their properties.	• **effects of pushes/pulls** on movement	Force Olympics	Grade K	**Lesson 1:** What's the biggest excavator? **Lesson 2, Read-along:** Why do builders need so many big machines?
	• effects of size, shape, and materials on movement	Force Olympics	Grade K	**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?
Daily and seasonal changes affect all living things.	• **weather** changes	Weather Watching	Grade K	**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?
	• **seasonal changes**			
	• **living things make changes** to accommodate daily and seasonal changes	Mini-lessons		**Mini-lesson:** Why do bears hibernate?** **Mini-lesson:** Where do bugs go in winter? **Mini-lesson:** Why do animals come back after going to warm places in winter?
	• First People's knowledge of seasonal changes			

Grade 1

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Living things have features and behaviours that help them survive in their environment.	• **classification** of living and non-living things			
	• **names** of local plants and animals			
	• **structural features** of living thing in the local environment	Plant & Animal Superpowers	Grade 1	**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 5:** Why don't trees blow down in the wind? **Lesson 6, Read-along:** What do sunflowers do when you're not looking?
	• **behavioral adaptations** of animals in the local environment	Plant Adventures	Grade 2	**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?
Matter is useful because of its properties.	• **specific properties** of materials allow us to use them in different ways	Material Magic	Grade 2	**Lesson 1:** Why do we wear clothes?

Grade 1, continued

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Light and sound can be produced and their properties can be changed.	• natural and artificial **sources of light** and **sound**	Lights & Sounds	Grade 1	**Lesson 1:** How do they 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?
	• **properties of light** and **sound** depend on their source and the objects with which they interact			
Observable patterns and cycles occur in the local sky and landscape.	• **common objects in the sky**	Spinning Sky	Grade 1	**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?
	• **local patterns** that occur on Earth and in the sky			
	• The knowledge of the First Peoples: - shared First Peoples knowledge of the sky - **local First Peoples** knowledge of the local landscape, plants, and animals - local First Peoples understanding and use of **seasonal rounds**			

Grade 2

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Living things have life cycles defined by their environment.	• **metamorphic** and **non-metamorphic** life cycles of different organisms	Power of Flowers	Grade 3	**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?
	• similarities between **offspring and parent**	Plant & Animal Superpowers	Grade 1	**Lesson 4, Read-along:** Why do family members look alike?
	• **First Peoples use of their knowledge** of life cycles			
Materials can be changed through physical and chemical processes.	• **physical** ways of changing materials	Material Magic	Grade 2	**Lesson 4:** What materials might be invented in the future? **Lesson 5:** Could you build a house out of paper?
	• **chemical** ways of changing materials			

Grade 2, continued

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Forces influence the motion of an object.	• types of **forces**	Invisible Forces	Grade 3	**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?
Water is essential to all living things, and it cycles through the environment.	• **water sources** including local watersheds	Work of Water	Grade 2	**Lesson 1:** If you floated down a river, where would you end up?
	• **water conservation**			
	• the **water cycle**	Stormy Skies	Grade 3	**Lesson 1:** Where do clouds come from? **Lesson 2:** How can we predict when it's going to storm? **Lesson 4:** How can you keep a house from blowing away in a windstorm?
	• Local First People's knowledge of water: - water cycles - conservation **- connection to other systems**			

Grade 3

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Living things are diverse, can be grouped, and interact in their ecosystems.	• **biodiversity** in the local environment	Animal Adventures	Grade 2	**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?
		Animals Through Time	Grade 3	**Lesson 1:** Where can you find whales in a desert? **Lesson 2:** How do we know what dinosaurs looked like? **Lesson 3:** Can you outrun a dinosaur? **Lesson 4:** What kinds 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?
	• **the knowledge of the First Peoples** of **ecosystems**			
	• **energy is needed for life**	Web of Life*	Grade 5	**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 by not a pond? **Lesson 6:** Why did the dinosaurs go extinct?

*Web of Life was originally designed for Grade 5, but can be taught in Grade 3 with modifications. Expect elements of this unit to be advanced for Grade 3.

MYSTERY science

Grade 3, continued

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
All matter is made of particles.	• **matter is anything that has mass and takes up space**	Chemical Magic*	Grade 5	**Lesson 4:** What do fireworks, rubber, and Silly Putty have in common? **Lesson 5:** Why do some things explode?
	• **atoms are building blocks of matter**			
Thermal energy can be produced and transferred.	• **sources of thermal energy**	Weather Watching**	Grade 3	**Lesson 5:** How could you warm up a frozen playground? **Lesson 6, Read-along:** How could you walk barefoot across hot pavement without burning your feet?
	• **transfer of thermal energy**			
Wind, water, and ice change the shape of the land.	• major local **landforms**	Mini-lessons		**Mini-lesson:** Could a mountain turn into a volcano?
	• local First Peoples knowledge of local landforms			
	• observable changes in the local environment caused by erosion and deposition by wind, water, and ice	Work of Water	Grade 2	**Lesson 2:** Why is there sand at the beach? **Lesson 3:** What's strong enough to make a canyon? **Lesson 4:** How can you stop a landslide?

*Chemical Magic was originally designed for Grade 5, but can be taught in Grade 3 with modifications. Expect elements of this unit to be advanced for Grade 3.

Grade 4

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
All living things sense and respond to their environment.	• sensing and responding: **- humans** **- other animals** **- plants**	Human Machine Waves of Sound	Grade 4 Grade 4	**Lesson 2:** What do people who are blind see? **Lesson 3:** How can some animals see in the dark? **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?
	• **biomes** as large regions with similar environmental features	Stormy Skies	Grade 3	**Lesson 3:** Why are some places always hot?
Matter has mass, takes up space, and can change phase.	• phases of matter	Material Magic Mini-lessons	Grade 2	**Lesson 2:** Can you really fry an egg on a hot sidewalk? **Lesson 3:** Why are so many toys made out of plastic? **Mini-lesson:** Can you make lava?
	• the effect of temperature on particle movement			

MYSTERY science

Grade 4, continued

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Energy can be transformed.	• energy: - has **various forms** - is **conserved**	Energizing Everything	Grade 4	**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?
	• **devices that transform energy**	Energizing Everything	Grade 4	**Lesson 6:** What if there were no electricity? **Lesson 7:** How long did it take to travel across the country before cars and planes? **Lesson 8:** Where does energy come from?
The motions of Earth and the moon cause observable patterns that affect living and non-living systems.	• local changes caused by **Earth's axis, rotation, and orbit**	Spaceship Earth	Grade 5	**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?
	• **the effects of the relative positions of the sun, moon, and Earth** including **local First Peoples perspectives**	Mini-lessons		**Mini-lesson:** Why do places have different times? **Mini-lesson:** How often do eclipses happen? **Mini-lesson:** What is the Moon made of? **Mini-lesson:** Why does the Moon turn blood red during a lunar eclipse?

Grade 5

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Multicellular organisms have organ systems that enable them to survive and interact with their environment.	• basic structures and functions of body systems: **- digestive** **- musculo-skeletal** **- respiratory** **- circulatory**	Human Machine Mini-lessons	Grade 4	**Lesson 1:** Why do your biceps bulge? **Mini-lesson:** What would happen if you didn't have a skull?** **Mini-lesson:** Why do our skeletons have so many bones?** **Mini-lesson:** How does your heart pump blood?** **Mini-lesson:** Why do we get hiccups? **Mini-lesson:** Why do we need blood?
Solutions are homogeneous.	• **solutions and solubility**	Chemical Magic	Grade 5	**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?

MYSTERY science

Grade 5, continued

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Machines are devices that transfer force and energy.	• properties of **simple machines** and their **force effects**	Energizing Everything	Grade 4	**Lesson 4:** Could you knock down a building using only dominoes? **Lesson 5:** Can you build a chain reaction machine?
	• machines: **- constructed** **- found in nature**			
	• **power** - the rate at which energy is transferred			
Earth materials change as they move through the rock cycle and can be used as natural resources.	• the rock cycle	The Birth of Rocks	Grade 4	**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?
	• local types of **earth materials**			
	• First Peoples concepts of **interconnectedness** in the environment			
	• the nature of sustainable practices around BC's resources	Watery Planet	Grade 5	**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?
	• First Peoples knowledge of sustainable practices			

Grade 6

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Big Idea	BC Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Multicellular organisms rely on internal systems to survive, reproduce, and interact with their environment.	• basic structures and functions of body **systems:** **- excretory** **- reproductive** **- hormonal** **- nervous**	Human Machine	Grade 4	**Lesson 4:** How does your brain control your body?
Everyday materials are often mixtures.	• **heterogeneous mixtures**			
	• mixtures: **- separated using a difference in component properties** **- local First Peoples knowledge** of separation and extraction methods			

MYSTERY science

Grade 6, continued

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Big Idea	British Columbia Content Learning Standard *Students are expected to know the following:*	Mystery Science Unit		Mystery Science Lessons
Newton's three laws of motion describe the relationship between force and motion.	• **Newton's three laws of motion**			
	• effects of **balanced and unbalanced forces** in **daily physical activities**			
	• **force of gravity**	Spaceship Earth Mini-lessons	Grade 5	**Lesson 7:** Why is gravity different on other planets? **Mini-lesson:** What is a black hole?
The solar system is part of the Milky Way, which is one of billions of galaxies.	• the overall scale, structure, and age of the universe	Spaceship Earth Mini-lessons	Grade 5	**Lesson 8:** Could there be life on other planets? **Mini-lesson:** Are aliens real?
	• the position, motion, and **components of our solar system** in our galaxy.	Spaceship Earth Mini-lessons	Grade 5	**Lesson 6:** What are the wandering stars? **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:** What causes the Northern Lights? **Mini-lesson:** Has a shooting star ever landed on someone?