

# PARENT GUIDE

## GRADE ONE SCIENCE CURRICULUM

### DIOCESE OF CLEVELAND

Below is a list of the skills your child will be taught in Grade One.

As parents, you are encouraged to support the work of your child's teacher in helping your child acquire each of these skills.

| <b>CAPACITIES OF THE LITERATE INDIVIDUAL</b>  |   |
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|   | They demonstrate independence.  |
|   | They build strong content knowledge.  |
|   | They respond to the varying demands of audience, task, purpose.   |
|   | They comprehend as well as critique.  |
|   | They value evidence.  |
|   | They use technology and digital media strategically and capably.  |
|   | They come to understand other perspectives and cultures.  |
| <b>SCIENTIFIC PROCESS AND INQUIRY</b>   |   |
| <b>SCIENTIFIC INQUIRY AND APPLICATION (OHIO REVISED SCIENCE STANDARDS AND MODEL CURRICULUM)</b> |   |
|   | Observe and ask questions about the natural environment.  |
|   | Plan and conduct simple investigations.   |
|   | Employ simple equipment and tools to gather data and extend the senses.   |
|   | Use appropriate mathematics with data to construct reasonable explanations.   |
|   | Communicate about observations, investigations and explanations.  |
|   | Review and ask questions about the observations and explanations of others.   |
| <b>SCIENTIFIC PROCESS (DIOCESAN CURRICULUM)</b>   |   |
|   | Identify the steps of a scientific process (hypothesis, experiment, and conclusion).  |
|   | Utilize the five senses to gather data.   |
|   | Explain that when trying to build or improve something, it helps to follow directions and ask someone who has done it before.                         |
|   | Explore and execute multistep procedures needed to make things.   |
|   | Ask, explore, and generate "what happens when" questions.   |
|   | Work in a small group to complete an investigation and then share findings with others.   |
|   | Use oral, written, and pictorial representation to communicate work.  |
|   | Discover that when a science investigation is done the same way multiple times, one can expect to get very similar results each time it is performed. |
| <b>SCIENTIFIC INTERPRETATION (DIOCESAN CURRICULUM)</b>  |   |
|   | Draw individual conclusions about group findings.   |
|   | Describe things as accurately as possible and compare with the observations of others.  |
|   | Demonstrate valid explanations based on evidence from investigations and observations.  |
| <b>SCIENTIFIC TOOLS AND SAFETY (DIOCESAN CURRICULUM)</b>  |   |
|   | Use the correct tools and simple equipment/instruments, because it is vital to safe and effective work.   |
|   | Use appropriate safety procedures when completing scientific investigations/experiments.  |
|   | Make estimates to compare familiar lengths, weights, and time intervals to actual measurements.   |
| <b>ETHICAL PRACTICES REFLECTING CATHOLIC SOCIAL JUSTICE TEACHING (DIOCESAN CURRICULUM)</b>      |   |
|   | Interact with living things and the environment in ways that promote respect.   |
|   | Explain that the supply of many resources is limited, but the supply can be extended through careful use, decreased use, reusing and /or recycling.   |

| <b>ETHICAL PRACTICES REFLECTING CATHOLIC SOCIAL JUSTICE TEACHING (CONTINUED)</b> |   |
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|  | Identify how people can save energy by turning things off when they are not using them                                      |
|  | Understand that pollution is harmful to our environment and can influence the health, survival, or activities of organisms. |
|  | Explain that everyone can practice, invent, and perform science activities.   |
|  | Demonstrate ways responsible science practices affect people in accordance with social justice teachings.                   |
|  | Identify careers in science.  |
| <b>EARTH AND SPACE SCIENCE – SUN, ENERGY, AND WEATHER</b>                        |   |
|  | <b>THE SUN IS THE PRINCIPAL SOURCE OF ENERGY.</b>   |
|  | a. Sunlight warms Earth's land, air and water.  |
|  | b. The amount of exposure to sunlight affects the amount of warming or cooling of air, water and land.                      |
|  | <b>THE PHYSICAL PROPERTIES OF WATER CAN CHANGE.</b>   |
|  | a. Physical states of water are solid, liquid, gas.   |
|  | b. Physical properties change due to changing energy.   |
|  | c. Water can change from a liquid to a solid and from a solid to a liquid.  |
|  | d. Weather observations can be used to examine the property changes of water.   |
|  | e. The downward movement of water is called precipitation.  |
| <b>LIFE SCIENCE – BASIC NEEDS OF LIVING THINGS</b>                               |   |
|  | <b>LIVING THINGS HAVE BASIC NEEDS, WHICH ARE MET BY OBTAINING MATERIALS FROM THE PHYSICAL ENVIRONMENT.</b>                  |
|  | a. Living things require energy, water and a particular range of temperatures in their environments.                        |
|  | b. Plants get energy from sunlight.   |
|  | c. Animals get energy from plants and other animals.  |
|  | d. Living things acquire resources from the living and nonliving components of the environment.                             |
|  | <b>LIVING THINGS SURVIVE ONLY IN ENVIRONMENTS THAT MEET THEIR NEEDS.</b>  |
|  | a. Resources are necessary to meet the needs of an individual and populations of individuals.                               |
|  | b. Living things interact with their physical environments as they meet those needs.  |
|  | c. Effects of seasonal changes within the local environment directly impact the availability of resources.                  |
|  | d. Living things survive only in environments that meet their needs.  |
|  | e. Plants and animals require resources from the environment.   |
|  | <b>PLANTS AND ANIMALS POSSESS UNIQUE PHYSICAL CHARACTERISTICS.</b>  |
| <b>PHYSICAL SCIENCE – MOTION AND MATERIALS</b>                                   |   |
|  | <b>PROPERTIES OF OBJECTS AND MATERIALS CAN CHANGE.</b>  |
|  | a. Objects and materials change when exposed to various conditions, such as heating or freezing. (physical change)          |
|  | b. Changes in temperature are a result of changes in energy.  |
|  | c. Not all materials change in the same way.  |
|  | d. Physical changes in the environment are caused by the effects of weathering, erosion, deposition.                        |
|  | <b>OBJECTS CAN BE MOVED IN A VARIETY OF WAYS, SUCH AS STRAIGHT, ZIGZAG, CIRCULAR AND BACK AND FORTH.</b>                    |
|  | a. The position of an object can be described by locating it relative to another object or to the object's surroundings.    |
|  | b. An object is in motion when its position is changing.  |
|  | c. The motion of an object can be affected by pushing or pulling.   |
|  | d. A push or pull is a force that can make an object move faster, slower or go in a different direction.                    |
|  | e. Changes in motion are a result of changes in energy.   |

**LITERACY IN SCIENCE & TECHNICAL SUBJECTS – READING INFORMATIONAL TEXT**

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| Ask and answer questions about key details in a text.  |
| Identify the main topic and retell key details of a text.  |
| Describe the connection between two individuals, events, ideas, or pieces of information in a text.  |
| Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.  |
| Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text. |
| Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.                               |
| Use the illustrations and details in a text to describe its key ideas.   |
| Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).                  |
| With prompting and support, read informational texts appropriately complex for grade 1.  |

**LITERACY IN SCIENCE & TECHNICAL SUBJECTS – WRITING**

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| Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.   |
| Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure. |
| With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed.  |
| With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.  |
| Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions).   |
| With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.  |

**LITERACY IN SCIENCE & TECHNICAL SUBJECTS – SPEAKING AND LISTENING**

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| Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.   |
| Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). |
| Build on others’ talk in conversations by responding to the comments of others through multiple exchanges.  |
| Ask questions to clear up any confusion about the topics and texts under discussion.  |
| Ask and answer questions about key details in a text read aloud or information presented orally or through other media.                             |
| Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.           |
| Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.   |
| Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.                                    |
| Produce complete sentences when appropriate to task and situation.  |

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