

Achievements and Competencies

Learning Outcomes

Grades K-3
Properties of objects and materials
Materials and our senses
Liquids and solids

Achievements and Competencies are based on the Common Framework of Science Learning Outcomes (K-12) set by the Canadian Council of Ministers of Education (1997).

Specific Expectations

Grade 1

PHYSICAL SCIENCE

Properties of objects and materials

100-12 Observe objects and materials and describe their similarities and differences (e.g., compare the properties of objects they and others have constructed. Investigate a variety of materials and describe the different forms they can take).

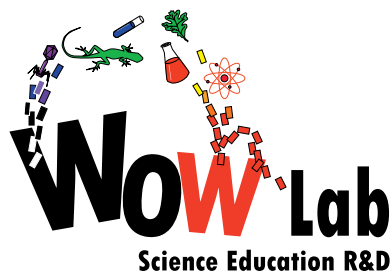
Colourific allows students to create soap crayons and puff paint using various materials. Since all of the students created their own crayons and paint, they can compare their properties and investigate the variety of forms the materials take.

101-5 Explore and describe ways to create useful objects by combining or joining different components or materials (e.g., identify objects and materials that are useful for constructing things. Observe that different materials have different characteristics and select materials according to a given need).

Soap, hot water, tempera paint and food colouring are used to create crayons which the students can use to draw and colour. Similarly, different materials are used to create the puff paint which the students will use to create a 3-D painting.

103-3 Describe and demonstrate ways to use materials appropriately and efficiently to the benefit of themselves and others (e.g., select the amount and kind of materials that are appropriate to a given task, recognize and demonstrate appropriate reuse of materials in daily activities).

When creating the soap crayons and puff paint, specific amounts of different materials are measured and used to create the final product.



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PHYSICAL SCIENCE

Materials and our senses

100-10 Identify attributes of materials that we can learn to recognize through each of our senses (e.g., compare sounds using words such as “loud” or “soft,” “high pitch” or “low pitch”; describe tastes as sweet, sour, salty, bitter; compare textures using words such as “hard” or “soft,” “smooth” or “rough,” “sticky” or “not sticky”. Describe appearance in terms of shape, colour, and lustre).

Using the various activities of *Colourific* the attributes of materials can be recognized and analyzed using different senses. The texture of the soap crayons and puff paint can be described using words such as “puffy” or “soft,” “smooth” or “rough,” “sticky” or “not sticky”. Similarly, the products from *Swirly Whirly Milk*, *Icy Colours* and *Colour Changing Markers* can be compared and described by their appearance in terms of shape, colour and lustre.

101-4 Describe ways in which materials can be changed to alter their appearance and texture (e.g., demonstrate and describe ways of changing the rough surface of a piece of wood, such as by sanding, painting, or waxing; describe ways to obtain a particular shade or colour by mixing two or more paints).

Every aspect of *Colourific* demonstrates how materials can be combined and changed to alter their appearance and texture. For example, to make soap crayons, soap flakes, hot water, tempera paint and food colouring are combined to create coloured and smooth, textured crayons.

102-1 Create a product that is functional and aesthetically pleasing to the user by safely selecting, combining and modifying materials (e.g., make a cover or case for some objects, make a musical instrument).

Functional painting and colouring materials are created by the students, through the combination and modification of different starting materials.

Grade 2

PHYSICAL SCIENCE

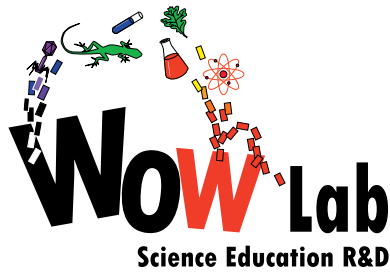
Liquids and solids

100-17 Investigate and compare properties of familiar liquids and solids (e.g., compare the texture and appearance of solids such as rocks, pencils and modeling clay. Compare properties of different liquids and their droplets when placed on wax paper).

The appearance and properties of the puff paint and soap crayons are investigated and compared as drawing and colouring tools.

100-19 Identify ways to use a variety of liquids and to combine solids and liquids to make useful materials (e.g., identify liquids used in the home and describe how they are used. Investigate and describe how to make paste with flour and water or how to make cookie dough).

Useful materials, such as paint and crayons, are created using a combination of solid and liquid materials.



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100-20 Investigate changes that result from the interaction of materials and describe how their characteristics have changed (e.g., determine that melting ice changes its feel, flow and ability to interact with other materials and recognize that the changes can be reversed. Discover that mixing materials may create a new material with characteristics that are different from the original components).

Swirly Whirly Milk demonstrates how changes in the original milk solution can occur due to the addition and interaction with a drop of dish soap. The students can discover that adding dish soap into the coloured milk solution affects the surface tension of the milk solution, creating a swirly whirly milk solution.