

Lesson Title/Focus	Introduction to Hot and Cold	Date	Nov 17 th 2015
Subject/Grade Level	Grade 2 Science	Time Duration	1 hour
Unit	Hot and Cold	Teacher	Taylor McKechnie

OUTCOMES FROM ALBERTA PROGRAM OF STUDIES

General Learning Outcomes:	Students will recognize the effects of heating and cooling, and identify methods for heating and cooling
Specific Learning Outcomes:	

LEARNING OBJECTIVES

Students will:

1. Create a chart of hot and cold pictures from magazines

ASSESSMENTS

Observations:	•
Products/Performances:	•

LEARNING RESOURCES CONSULTED

MATERIALS AND EQUIPMENT

<ul style="list-style-type: none"> • Edmonton Public Schools • Curriculum Lab – Book • 	<ul style="list-style-type: none"> • Magazines/ Glue/Scissors/ Markers • Large Piece of Paper • Smartboard • Book
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PROCEDURE

<i>Prior to lesson</i>	Ensure that you have the book, have glue and scissors out for the students, big piece of paper is ready for students pictures.	
Introduction		Time
<i>Attention Grabber</i>		
<i>Assessment of Prior Knowledge</i>	<i>What do the students already know about hot? Cold? Can they identify objects? Do they know how something warms up? Cool down?</i>	
Body		Time
<i>Learning Activity #1</i>	Read a Book – Class	10
<i>Teacher Notes: Assessments/ Differentiation</i>	Read the book the class. Pose questions to them about what they think the story will be about before we begin. <i>How do they know that?</i> When the story is finished ask the students what sort of things came to mind when they thought about that book?. Explain what we are going to do next before they move to their seats.	
<i>Learning Activity #2</i>	Brainstorm – Hot and Cold - Class	10
<i>Teacher Notes: Assessments/ Differentiation</i>	After reading the story, brainstorm a list of things that we think are hot and things that we think are cold. <i>What sort of things are hot? Cold? How do we know that it is hot ? or cold? What sort of things help us tell if it is hot or cold? How does something change from hot to cold? Vice versa?</i>	
<i>Learning Activity #3</i>	Make a Visual Chart - Individual/Class	30
<i>Teacher Notes: Assessments/ Differentiation</i>	Have students cut out pictures of things that they think are either hot or cold items. Have them come to a designated spot in the classroom and glue the items under the correct heading (Hot or Cold). Once all the students in the class have put their pictures on the chart, hang the chart up in the classroom. Discuss the chart. Label what each item is maybe	

	discuss each of the items briefly? Or some of the items?	
Closure		Time
<i>How Will I Know Students Learned the Outcomes?</i>	Students will correctly put pictures in the “hot” or “cold” category. They are able to think about things that are either hot or cold. Answer questions and be engaged in the conversation with the class.	
<i>Transition To Next Lesson</i>		

Lesson Title/Focus	Tasty Freeze	Date	Dec 3 rd , 2015
Subject/Grade Level	Grade 2 Science	Time Duration	1 hour
Unit	Hot and Cold	Teacher	Taylor McKechnie

OUTCOMES FROM ALBERTA PROGRAM OF STUDIES

General Learning Outcomes:	Recognize the effects of heating and cooling, and identify methods for heating and cooling.
Specific Learning Outcomes:	Describe how heating and cooling materials can often change them; eg melting and freezing, cooking, burning

LEARNING OBJECTIVES

Students will:

2. Observe an experiment to predict if a liquid will change as it is cooled

ASSESSMENTS

Observations:	•
Products/Performances:	• Participation in discussion, performance in experiment and record correct answers in booklets

LEARNING RESOURCES CONSULTED

MATERIALS AND EQUIPMENT

<ul style="list-style-type: none"> • TA resources • Program of Studies • Edmonton Public Schools • Access Learning Video – Science in the City, Making Ice Cream 	<ul style="list-style-type: none"> • Workbooks • Materials for experiment (Crushed Ice, Plastic Spoons, Ziplock Bags, Chocolate Milk, Sweetened Condensed Milk, Salt, Measuring Cups and Spoons) • Video
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PROCEDURE

<i>Prior to lesson</i>	Set up all materials, ensure that you have understand the outcome of the experiment so that you can guide learning.	
Introduction		Time
Body		Time
<i>Learning Activity #1</i>	Brainstorm – Class Discussion	<i>15 minutes</i>
<i>Teacher Notes: Assessments/ Differentiation</i>	As a class, have students predict what they think might happen to a liquid as it is cooled. Do this brainstorming on the smartboard so you can write out some of the words used by students so that they can have things to fuel their ideas when writing their own predictions. Fuel discussion for the topic by reminding students what happens to water when it freezes or when a popsicle starts to melt.	
<i>Learning Activity #2</i>	Experiment – Class Demonstration	<i>15 minutes</i>
<i>Teacher Notes:</i>	Students will work with supplies in twos. Demonstrate the experiment at	

Assessments/ Differentiation	the front of the class as the students work through the experiment. Measure milk into a small Ziploc bag. Place small bag into large bag. Add crushed ice and salt. Seal Large Bag. Carefully knead the package for 5-10 minutes adding more ice and salt if necessary. Check consistency after 5 minutes. Continue kneading until a firm consistency is reached. Taste the treat. (maybe start the experiment prior to doing the brainstorming and then have students write the prediction while they are waiting for the experiment to go on)	
Learning Activity #3	Wrap Up – Individual/ Class	25 minutes
Teacher Notes: Assessments/ Differentiation	Have students write what they see happening to the bag. After going to all the groups, have the students pick out key things from the bag to include in their drawings. After the students have finished writing observations and drawings, have students write down what actually happened during the experiment. Have several students share what they wrote down. While students are eating their ice cream, have the students watch the video, <i>Science in the City, Making Ice Cream</i> .	
Closure		Time
How Will I Know Students Learned the Outcomes?	Students will have learned this outcome if they can demonstrate that they used the scientific process laid out in the book. (use previous knowledge to make a guess, write/draw what they see happening, reflect on what has happened and how that might be different from what they originally thought)	
Feedback To Students	Constantly asking them questions throughout the experiment, asking them to explain why they think certain things about the experiment.	

Lesson Title/Focus	Stop The Wind	Date	Dec 11 th ,2015
Subject/Grade Level	Grade 2 Science	Time Duration	1 hour
Unit	Hot and Cold	Teacher	Taylor McKechnie

OUTCOMES FROM ALBERTA PROGRAM OF STUDIES	
General Learning Outcomes:	Recognize the effects of heating and cooling, and identify methods for heating and cooling.
Specific Learning Outcomes:	Identify ways in which the temperature in homes and buildings can be adjusted. Ex : by turning the thermostat up or down, by opening or closing windows, or by using a space heater in a cold room
LEARNING OBJECTIVES	
Students will:	
3. Test and Explain which fabrics provide better wind resistance than others	
ASSESSMENTS	
Observations:	<ul style="list-style-type: none"> Class discussions,
Products/Performances:	<ul style="list-style-type: none"> Correct answers in booklets, correctly performed experiments /answers in the sheets
LEARNING RESOURCES CONSULTED	MATERIALS AND EQUIPMENT
	<ul style="list-style-type: none"> Worksheets

<ul style="list-style-type: none"> Edmonton Public School TA Resources 	<ul style="list-style-type: none"> Straws, Confetti, Chalk, Black Construction Paper, Fabric Samples
PROCEDURE	
<i>Prior to lesson</i>	
Introduction	
Body	
Learning Activity #1	Introduction
<i>Teacher Notes: Assessments/ Differentiation</i>	Ask Students <i>why our jackets in the winter time might have fur/extra fabric, but our summer jackets don't?</i> Are there some jackets that are better than others? Why do you think they might be better than others?
Learning Activity #2	Experiment
<i>Teacher Notes: Assessments/ Differentiation</i>	Give a different material to each group of students. Have the students look at there piece of fabric and observe certain qualities about the fabric (texture, thickness, stiffness, tightness of weave). Give students a straw and a piece of construction paper. Give students a small amount of confetti paper and put it in a small spot on the construction paper, put the fabric ovetop of the spot, and have students blow through the straw, ask students to watch if the confetti moves or not. If confetti doesn't move, add another layer of confetti. If the confetti moves a lot, the fabric is not very wind resistant. If the confetti doesn't move at all or there are many layers, then the fabric provides very good wind resistance.
Learning Activity #3	Closure
<i>Teacher Notes: Assessments/ Differentiation</i>	With the students, rank the fabrics that we used from the best to the worst protection from the wind. Ask students why certain ones were put in certain places. Explain that when there is wind outside, it is usually cold on our bodies, which means that we need more layers or materials with less holes in them because wind is one of those things that has the ability to creep through small spaces. So we use layers of clothing in order to keep our bodies from losing heat and letting the cold get through. Remind the students that heat usually likes to go from hot surfaces to cold surfaces so in the wind, our bodies are considered the warm surface and the
Closure	
How Will I Know Students Learned the Outcomes?	<p>Students will have learned this outcome if the can recognize that not all fabric is the same and there are differing properties between them. (some have holes, some are not stretchy, some are stiff)</p> <p>Students will have learned this outcome if they can use the properties to predict what they think the most wind resistant fabric is. (I think that _____ will be the best because it has the least amount of holes, it is stiff, it is thick,etc)</p> <p>Students will have learned this outcome if they can rank the fabrics wind resistance based on the experiment. (I think that this fabric is more wind resistant than this one because it is more _____)</p>
Feedback To Students	

Lesson Title/Focus	Animal Insulation	Date	Dec 10 th , 2015
Subject/Grade Level	Grade 2 Science	Time Duration	1 Hour
Unit	Hot and Cold	Teacher	Taylor McKechnie

OUTCOMES FROM ALBERTA PROGRAM OF STUDIES

General Learning Outcomes:	Recognize the effects of heating and cooling, and identify methods for heating and cooling.
Specific Learning Outcomes:	Identify materials that insulate animals from the cold; e.g., wool, fur and feathers; and identify materials that are used by humans for the same purpose.

LEARNING OBJECTIVES

Students will:

- 4. Identify and record the different insulating materials used by animals

ASSESSMENTS

Observations:	<ul style="list-style-type: none"> • Class discussion
Products/Performances:	<ul style="list-style-type: none"> • Correct answers in booklets, able to answer questions and participate in explaining to class (show understanding)

LEARNING RESOURCES CONSULTED

MATERIALS AND EQUIPMENT

<ul style="list-style-type: none"> • Edmonton Public School • TA Resources • Program of Studies • Discovery Education Videos 	<ul style="list-style-type: none"> • Worksheets • Cards • Video – Magic School Bus – Insulation in the Arctic
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PROCEDURE

Prior to lesson	Ensure materials are in place.	
	Introduction	Time
	Body	Time
Learning Activity #1	Video – Animal Insulation	30 minutes
<i>Teacher Notes: Assessments/ Differentiation</i>	Show the class the “Magic School Bus Video” Insulation in the Arctic	
Learning Activity #2	Jigsaw Groups	30 minutes
<i>Teacher Notes: Assessments/ Differentiation</i>	Give students two of the cards with animals and have them determine what that animal uses an insulator. Have the students come show there card to the front of the class and write the word of the insulating material on the board. Continue this process until all the cards/groups have been explained to the whole class. <i>Why might this animal use this type of insulating material? Can you think of something we might use that is similar to this to stay warm? Why is it important to insulate things when it gets cold out?</i>	
	Closure	Time
How Will I Know Students Learned the Outcomes?	Students will have learned this outcome if they can successfully identify what insulating material is used by certain animals and why they might use this material. Explain to the class why there material is a good choice for keeping something warm (protects against the water, wind,	

	attracts heat, not to heavy, etc) Students can recognize certain things from the video as applicable to their own life or a time when they might have done something similar.	
Feedback To Students		

Lesson Title/Focus	Hotter Than or Colder Than?	Date	Nov 19 th 2015
Subject/Grade Level	Science Grade 2	Time Duration	1 hour
Unit	Hot and Cold	Teacher	Taylor McKechnie

OUTCOMES FROM ALBERTA PROGRAM OF STUDIES

General Learning Outcomes:	Recognize the effects of heating and cooling and identify methods for heating and cooling
Specific Learning Outcomes:	Describe temperature in relative terms, using expressions, such as hotter than, colder than

LEARNING OBJECTIVES

Students will:

- 5. Create a list of comparative sentences using *hotter than* and *colder than*

ASSESSMENTS

Observations:	•
Products/Performances:	• Comparative sentence worksheet

LEARNING RESOURCES CONSULTED

MATERIALS AND EQUIPMENT

<ul style="list-style-type: none"> Edmonton Public Schools Curriculum Lab Tumble Books 	<ul style="list-style-type: none"> index cards worksheets thermometer timeline maybe book? Tumble Books
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PROCEDURE

Prior to lesson	Photocopy worksheets, cut index cards, find video, have charts up in the classroom	
	Introduction	Time
Attention Grabber	Watching a book from Tumble Books	
Assessment of Prior Knowledge		
	Body	Time
Learning Activity #1	Tumble Books -	<i>15 mins</i>
Teacher Notes: Assessments/ Differentiation	Students will watch the book on “ Too Hot? Too Cold? Keeping Body Temperature Just Right” from Tumble Books.	
Learning Activity #2	Review/ Transition into New Material – Class Discussion	<i>8 mins</i>
Teacher Notes: Assessments/ Differentiation	Using the hot and cold charts that we made last day, ask students questions about what we learned last day about hot and cold. <i>What sorts of objects did we say were hot? Why? What sort of objects did we say were cold? Begin to pose questions like was object A hotter than object B? Was object C colder than object A ? (Yes or No questions)</i>	
Learning Activity #3	Temperature Wars – Pairs	<i>30 mins</i>

<p><i>Teacher Notes: Assessments/ Differentiation</i></p>	<p>Have the students’ pair up. In their partners, give students a stack of index cards. Have them pick up the first 2 cards and figure out which item is hotter than the other. Write the words on the appropriate side of the <i>hotter than</i> on the worksheet. (Have <i>hotter than</i> and <i>colder than</i> written down a worksheet) .Repeat this process with the <i>colder than</i> on the worksheet. Demonstrate an example of each with the whole class Have students complete the pairs until they have no more cards left. When the students are done, they need to put their names on the top of their worksheets and hand them in.</p>	
Closure		Time
<p><i>How Will I Know Students Learned the Outcomes?</i></p>	<p>Students will have learned this outcome if they can correctly write the objects on the index cards in terms of one another. (ie. Object a is actually hotter than object B or object A is actually colder than Object B)</p>	
<p><i>Feedback To Students</i></p>	<p>If there is problems with the worksheet, make sure to address this to the class. Remind them what something means to be hotter than/ colder than something else. Maybe use the thermometer timeline to show that this one is more positive so that means on the thermometer that it is hotter, etc. As an additional reinforce for this, maybe this could be a daily question added to calendar time? <i>Is today colder than or hotter than yesterday? Why?</i></p>	
<p><i>Transition To Next Lesson</i></p>		
<p>Sponge Activity/Activities If students finish the activity early they may read a book silently or color in the pictures on the index cards.</p>		