# Standard #: SC.4.P.11.1

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Recognize that heat flows from a hot object to a cold object and that heat flow may cause materials to change temperature.

## General Information

**Subject Area:** Science

**Grade:** 4

**Body of Knowledge:** Physical Science

**Idea:** Level 1: Recall

**Big Idea:** Energy Transfer and Transformations - A. Waves involve a transfer of energy without a transfer of matter.

B. Water and sound waves transfer energy through a material.

C. Light waves can travel through a vacuum and through matter.

Clarification for grades 5-8: The target understanding for Big Idea 11: Energy Transfer and Transformations, is the Law of Conservation of Energy: Energy is conserved as it transfers from one object to another and from one form to another.

**Date Adopted or Revised:** 02/08

**Content Complexity Rating:** Level 1: Recall - More Information

**Date of Last Rating:** 05/08

**Status:** State Board Approved

**Assessed:** Yes

## Related Courses

| Course Number | Course Title |
|---|---|
| 5020050: | Science - Grade Four (Specifically in versions: 2014 - 2015, 2015 - 2022 (current), 2022 and beyond) |
| 7720050: | Access Science Grade 4 (Specifically in versions: 2014 - 2015, 2015 - 2018, 2018 and beyond (current)) |

## Related Access Points

| Access Points Number | Access Points Title |
|---|---|
| SC.4.P.11.In.1: | Identify that a hot object will make a cold object warm when they touch. |
| SC.4.P.11.Su.1: | Recognize that a hot object can make a cold object warm when they touch. |
| SC.4.P.11.Pa.1: | Recognize a temperature change from cold to warm. |

## Related Resources

Lesson Plans

| Name | Description |
|---|---|
| Just Right Goldilocks' Café: Temperature & Turbidity: | This is lesson 3 of 3 in the Goldilocks' Café Just Right unit. This lesson focuses on systematic investigation on getting a cup of coffee to be the "just right" temperature and turbidity level. Students will use both the temperature probe and turbidity sensor and code using ScratchX during their investigation. |
| Just Right Goldilocks' Café: Turbidity: | This is lesson 2 of 3 in the Just Right Goldilocks' Café unit. This lesson focuses on systematic investigation on getting a cup of coffee to be the "just right" level of turbidity. Students will use turbidity sensors and code using ScratchX during their investigation. |
| Just Right Goldilocks' Café: Temperature: | This is lesson 1 of 3 in the Just Right Goldilocks' Café unit. This lesson focuses on systematic investigation on getting a cup of coffee to be the "just right" temperature. Students will use temperature probes and code using ScratchX during their investigation. |
| Heating Up the Neighborhood: | This Engineering Design Challenge is intended to help students apply the concepts of heat insulators as they build a model house and test different materials to use as insulators, stopping the warm air from escaping and keeping the cool air out. Students will also have an opportunity to use technology in their exploration of heat energy. |

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| Keep it Cool –an Engineering Design Challenge: | This Engineering Design Challenge is intended to help fourth grade students apply the concepts of the flow of heat from a hot object to a cold object and that heat flow may cause objects to change temperature. It is not intended as an initial introduction to this benchmark. |
| Stop Heat From Escaping: | In this activity, students act as engineers to determine which type of insulation would conserve the most energy. |

Teaching Idea

| Name | Description |
|---|---|
| Cool It!: | As a result of this activity, students will be able to observe that materials transfer heat at different rates. |