Heat Path Detectives

Read how common materials move heat.

SC.4.P.11.2 "Identify common materials that conduct heat well or poorly."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Circle each material that conducts heat well, and underline each material that conducts heat poorly, so you can compare how heat moves through them.

Choosing Materials Near Heat

1. On a cool morning, Maya helps prepare oatmeal. She notices that the metal pot handle becomes warm when the pot sits on the stove. Heat moves through the metal from the hot pot toward the handle. Copper, aluminum, iron, and steel are common materials that conduct heat well. They let heat move through them easily and quickly.

2. Not every material acts the same way. A wooden spoon can stir the oatmeal without becoming as hot as the pot. Rubber and plastic also conduct heat poorly. These materials slow the movement of heat. They are often used for handles, mitts, or coverings because they help protect hands from a nearby hot object.

3. Choosing a material depends on its job. A metal baking sheet conducts heat well, so heat can reach food in an oven. A silicone oven mitt conducts heat poorly, so it slows heat before it reaches a person's hand. Thick materials can slow heat for longer, but the kind of material is important too. Do not touch hot objects to test a material.

2 ANSWER WITH EVIDENCE

Use the passage

1. Which four materials in the first paragraph conduct heat well?

2. Name three materials from the passage that conduct heat poorly.

3. Why is wood useful for a spoon used near hot oatmeal?

4. Compare the baking sheet and the silicone oven mitt. Which one conducts heat well, and which one conducts heat poorly?

3 YOUR TURN

Your own words

Plan a safe skillet for cooking. Fill in the table with three skillet parts, a material for each part, whether it should conduct heat well or poorly, and why.

SKILLET PART	MATERIAL	CONDUCTS HEAT WELL OR POORLY?	WHY?

ANSWER KEY

Heat Path Detectives

GRADE 4 · SC.4.P.11.2

PART 1 · READ AND MARK

Circle each material that conducts heat well, and underline each material that conducts heat poorly, so you can compare how heat moves through them. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Which four materials in the first paragraph conduct heat well?	**Copper, aluminum, iron, and steel.**
2	Name three materials from the passage that conduct heat poorly.	**Wood, rubber, and plastic. Silicone also conducts heat poorly.**
3	Why is wood useful for a spoon used near hot oatmeal?	**Wood conducts heat poorly, so it does not become as hot as the pot and helps protect a hand.**
4	Compare the baking sheet and the silicone oven mitt. Which one conducts heat well, and which one conducts heat poorly?	**The metal baking sheet conducts heat well. The silicone oven mitt conducts heat poorly.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

SKILLET PART	MATERIAL	CONDUCTS HEAT WELL OR POORLY?	WHY?
Pan base	Aluminum	Well	Heat moves through it to cook the food.
Handle	Wood	Poorly	Less heat moves to the cook's hand.
Lid knob	Plastic	Poorly	It slows heat before a hand touches it.

Accept any common material that is correctly identified as a good or poor heat conductor and has a reason that fits the part's job. For the skillet, parts that heat food should use good conductors, while parts meant to hold should use poor conductors.