Name: Date: Score: / 8

Thermal Insulation: Learn and Practice

Design ways to slow heat transfer

Read each question. Circle the best answer.

💡 Thermal Insulation

- Thermal energy always moves from warmer objects to cooler ones.
- Insulators like air, foam and wool slow this transfer.
- Engineers test designs to keep things hot or cold for longer.
- foam cooler with a tight lid: ice lasts longer

1 Why does a thermos have a vacuum between its two walls?

A. It makes the bottle shiny

B. No particles to carry heat across

C. It lets air flow through

D. It adds heat to the drink

2 Why does a lid help keep soup hot?

A. It makes the bowl heavier B. It cools the soup

C. It stops warm air and steam escaping

D. It adds heat

3 🏠 Why do houses have insulation in walls and attics?

A. To conduct heat outside

B. To reduce heat loss and save energy

C. To let the cold in D. To make walls heavier

4 🧥 Why do winter coats keep you warm?

A. They trap air and slow heat loss

B. They make their own heat

C. They only block light D. They are magnetic

5 What is an insulator?

A. A heat source B. A type of fuel

C. A material that speeds heat up

D. A material that slows heat transfer

6 Which material is a good insulator?

A. Steel B. Copper C. Iron D. Foam

7 Which way does thermal energy flow?

A. From cooler to warmer B. It never moves

C. From warmer to cooler D. Only upward

8 🍲 Why do pot handles often use plastic or wood?

A. They do not conduct heat well

B. They conduct heat well C. They melt easily

D. They are heavier

✏️ Explain it! Write two facts you learned about thermal insulation.

ANSWER KEY

Thermal Insulation: Learn and Practice (answers)

Design ways to slow heat transfer

Read each question. Circle the best answer.

1 Why does a thermos have a vacuum between its two walls?

A. It makes the bottle shiny

B. No particles to carry heat across

C. It lets air flow through

D. It adds heat to the drink

Conduction and convection need particles, so an empty space blocks them.

2 Why does a lid help keep soup hot?

A. It makes the bowl heavier B. It cools the soup

C. It stops warm air and steam escaping

D. It adds heat

A lid traps warm air and steam, slowing heat loss.

3 🏠 Why do houses have insulation in walls and attics?

A. To conduct heat outside

B. To reduce heat loss and save energy

C. To let the cold in D. To make walls heavier

Insulation keeps warm air in during winter, so less fuel is needed.

4 🧥 Why do winter coats keep you warm?

A. They trap air and slow heat loss

B. They make their own heat

C. They only block light D. They are magnetic

Coats hold a layer of still air that slows heat leaving your body.

5 What is an insulator?

A. A heat source B. A type of fuel

C. A material that speeds heat up

D. A material that slows heat transfer

Insulators slow the flow of thermal energy.

6 Which material is a good insulator?

A. Steel B. Copper C. Iron **D. Foam**

Foam is full of trapped air, which slows heat transfer.

7 Which way does thermal energy flow?

A. From cooler to warmer B. It never moves

C. From warmer to cooler D. Only upward

Heat always moves from the warmer object to the cooler one.

8 🍲 Why do pot handles often use plastic or wood?

A. They do not conduct heat well

B. They conduct heat well C. They melt easily

D. They are heavier

Poor conductors stay cool enough to hold safely.