UNIT 5. HEAT AND LIGHT

1. Read about how thermal energy moves. Then answer the questions.

Thermal energy likes to move around. There are three ways that thermal energy can move; convection, radiation or conduction. Convection occurs when thermal energy moves because matter is moving. For example, when an area of warm air is heated by the sun and rises, or when warmer liquid rises to the top of a cooking pot as the pot is heated. Radiation occurs when there is no matter for thermal energy to move through, for example in space. This is how thermal energy travels between the Sun and the Earth's atmosphere. Finally, thermal energy can move by conduction. This occurs when thermal energy passes from one object to another when they are touching each other. For example, when you touch an ice cube, thermal energy passes from your fingers to the ice cube, melting it.

a) In what ways can thermal energy move?

_____

b) What is the name for the transfer of thermal energy caused by the movement of matter?

_____

c) What type of energy transfer takes place when you stand on warm sand and your feet get hotter?

_____

2. Underline true or false? Correct the wrong statements.

a) Heat and temperature are the same thing. True / False

_____

b) Thermal energy can make objects contract. True / False

_____

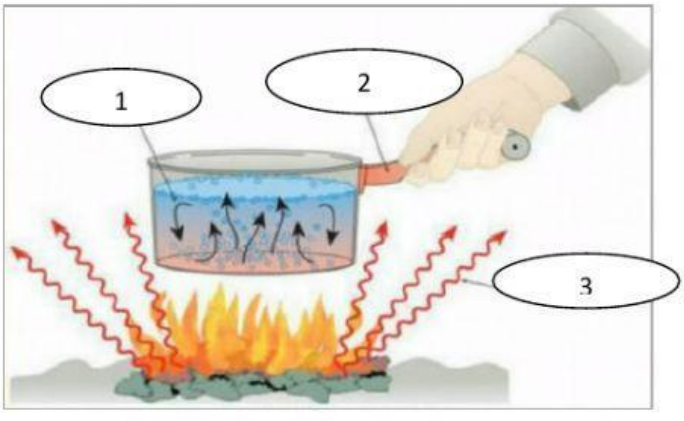
c) Heat travels from colder objects to hotter objects True / False

_____

d) Thermal energy can cause objects to change state. True / False

_____

3. Label the three ways in which heat is being transferred in the picture.



1: _____

2: _____

3: _____

LIVEWORKSHEETS

3. Name the process being described.

evaporation	solidification	condensation	melting

a) When a liquid changes into a solid: _____

b) When a liquid changes into a gas:_____

c) When a solid changes into a liquid:_____

d) When a gas changes into a liquid:_____

4. Write *reflection* or *refraction*. *Label the pictures.*



_____



_____

a) We can split white light into colours. _____

b) Light bounces off shiny surfaces. _____

c) Water changes the direction of the light that passes through it. _____

d) When we look at a straw in a glass of water, it appears to be bent. _____

e) When we look in a mirror we can see our own face. _____

5. Finish the sentences using the words in the box.

transparent
direction
dark
mirror
better

a) The mirror reflects the light, causing the light to change _____.

b) You can see the reflection of the object in the _____.

c) When light passes through some _____ substances, it changes direction slightly.

d) Light colours absorb light energy _____ than _____colours .

6. Classify the terms in the table below.

conduction translucent condensation convection evaporation
opaque radiation reflection refraction solidification transparent

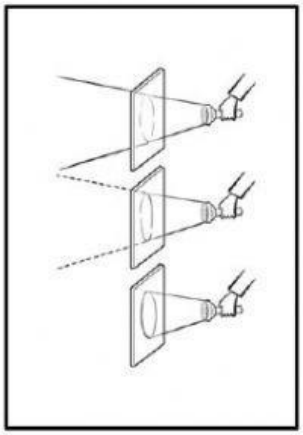
Heat	Light

7. Match the pictures with the words and definitions.

opaque

transparent

translucent



It blocks some light, but some passes through

It blocks the light, completely

It doesn't block light, it passes through

LIVEWORKSHEETS