

شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية



حل نموذج أسئلة تدريبية كتابية منهج انسابير

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تاريخ نشر الملف على موقع المناهج: 2023-11-26 07:07:37

التواصل الاجتماعي بحسب الصف السادس



روابط مواد الصف السادس على تلغرام

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المزيد من الملفات بحسب الصف السادس والمادة علوم في الفصل الأول

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EOT - TERM 1 - Science - FRQ - Practice

Name:

Grade: 6/.....

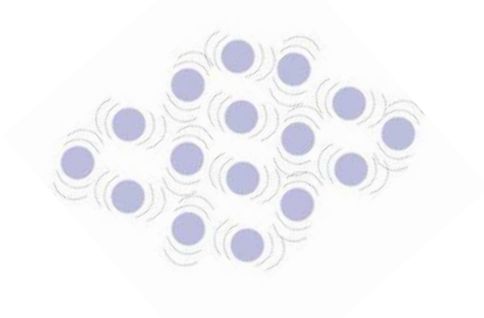
Determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.

Textbook, figures page 17, 21

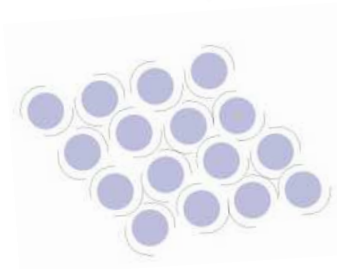
1. Compare between thermal expansion and thermal contraction.

Thermal Expansion	Thermal Contraction
Temperature Increase	Temperature Decrease
Particles move faster	Particles move slower
Particles collide more often	Particles collide less often
Particles push each other farther apart	Particles move closer
Volume increase	Volume decrease

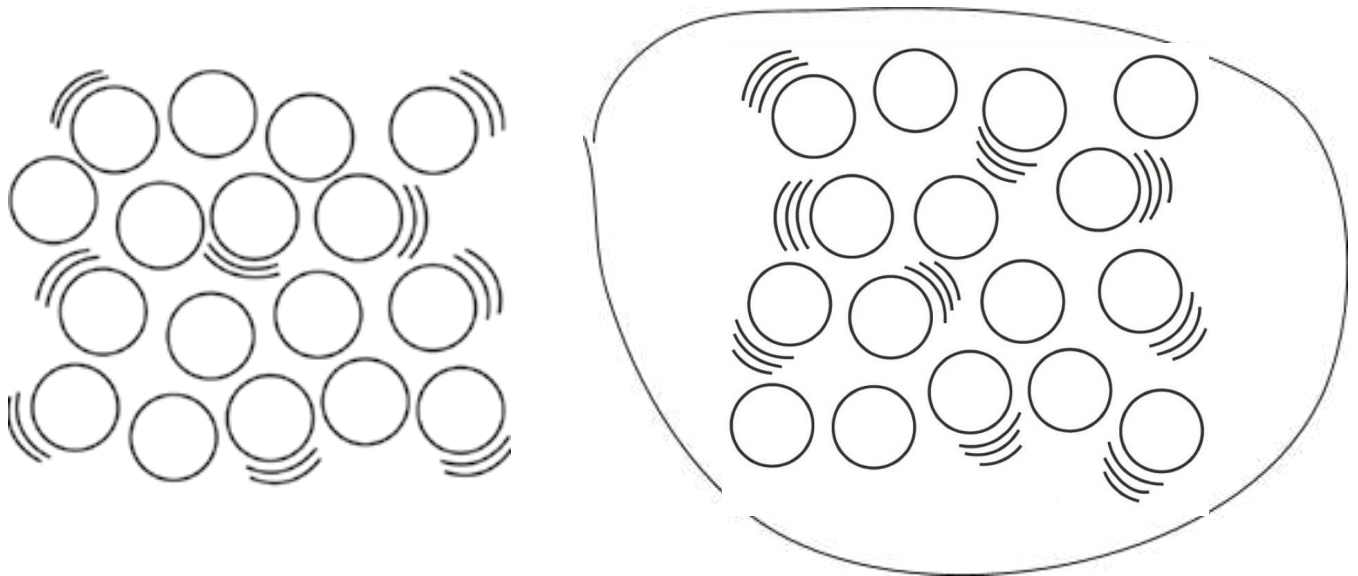
2. Sketch a diagram to model the particles of thermal expansion.



3. Sketch a diagram to model the particles of thermal contraction.



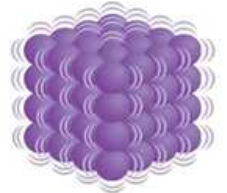
4. Circle the model that has more kinetic energy.



5. Compare the Energy and temperature for thermal expansion and thermal contraction.

	Temperature	Kinetic Energy
Thermal Expansion	Increases	Increases
Thermal Contraction	decreases	decreases

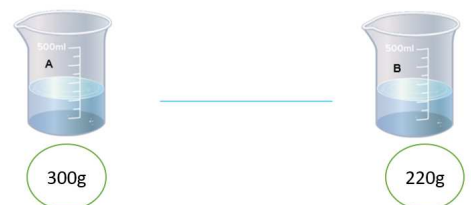
6. Which of the following statements best describes the particles in the solid material illustrated in the following figure?



- a. They are stationary and do not vibrate
- b. They are moving very slow and more apart.
- c. The particles are close together.**
- d. The particles vibrate in their place.**
- e. They have high kinetic energy.
- f. They are moving very fast and far apart.
- g. They have low amount of kinetic energy.**
- h. Expansion and contraction in solids does occur but it is less noticeable.**

7. Dana is heating two beakers of water. Which beaker has more energy? Give Reason.

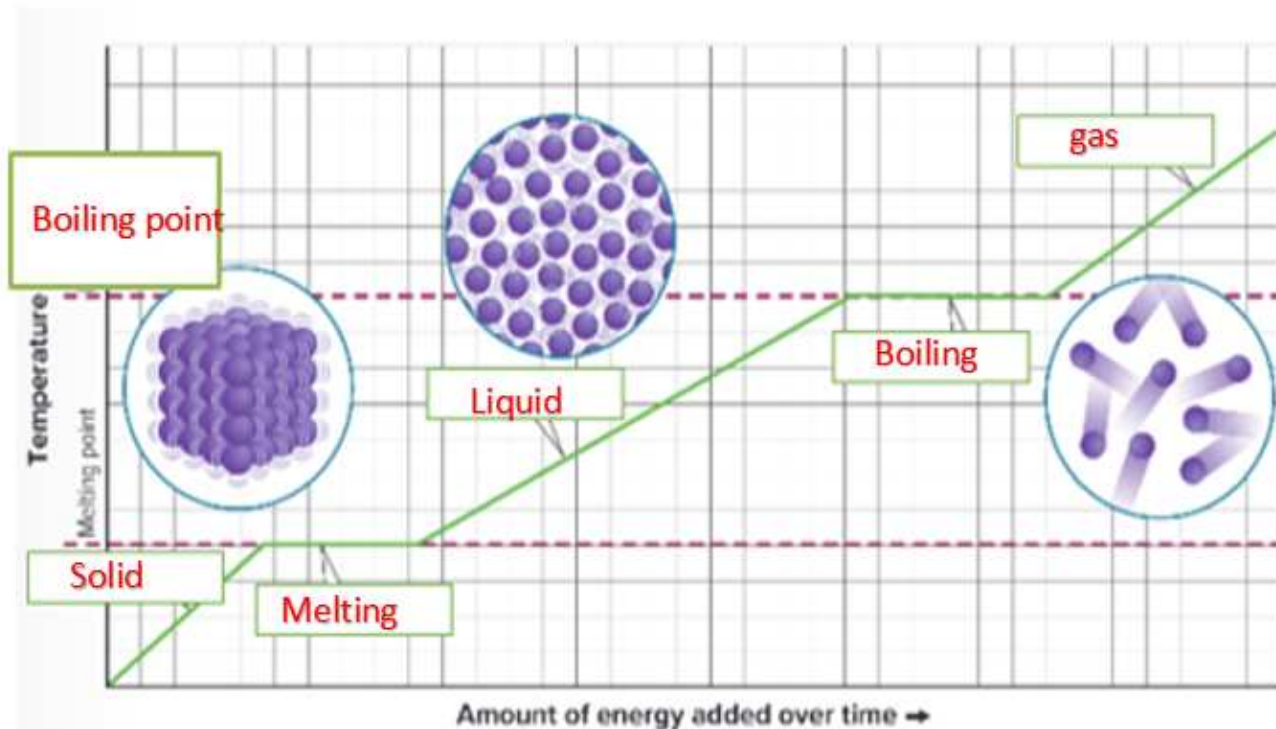
...Beaker A. Because it has more number of particles.....



Compare between the different three states of matter and the processes that change between them.

Textbook, figure, investigation. 44, 45

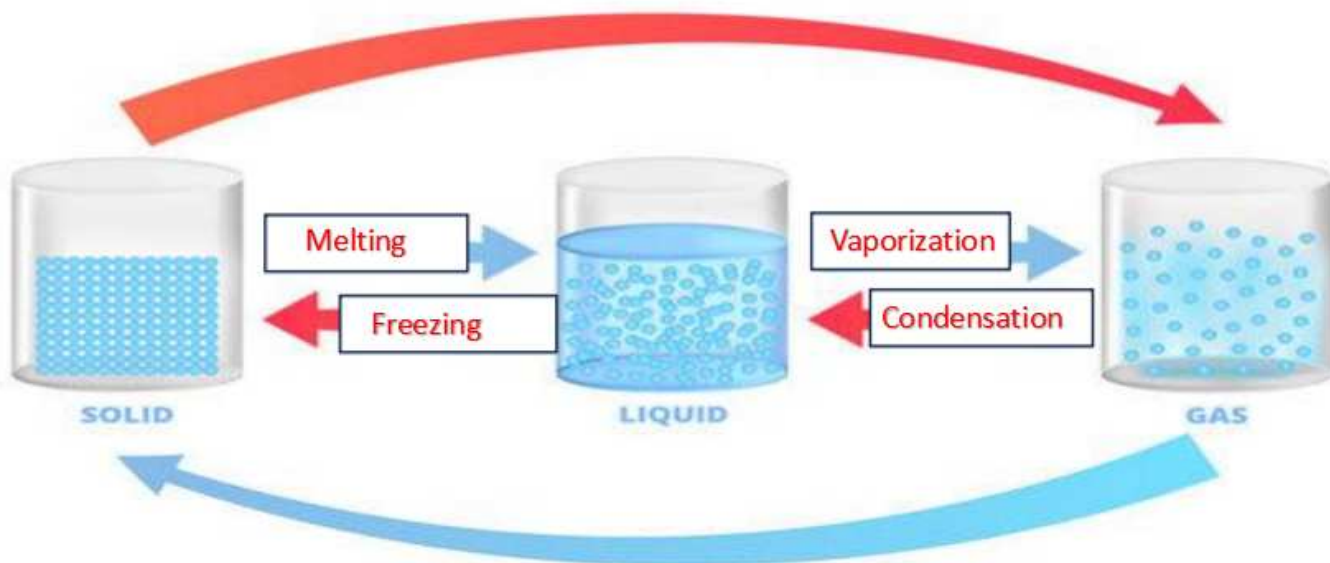
1. Label the heating curve.



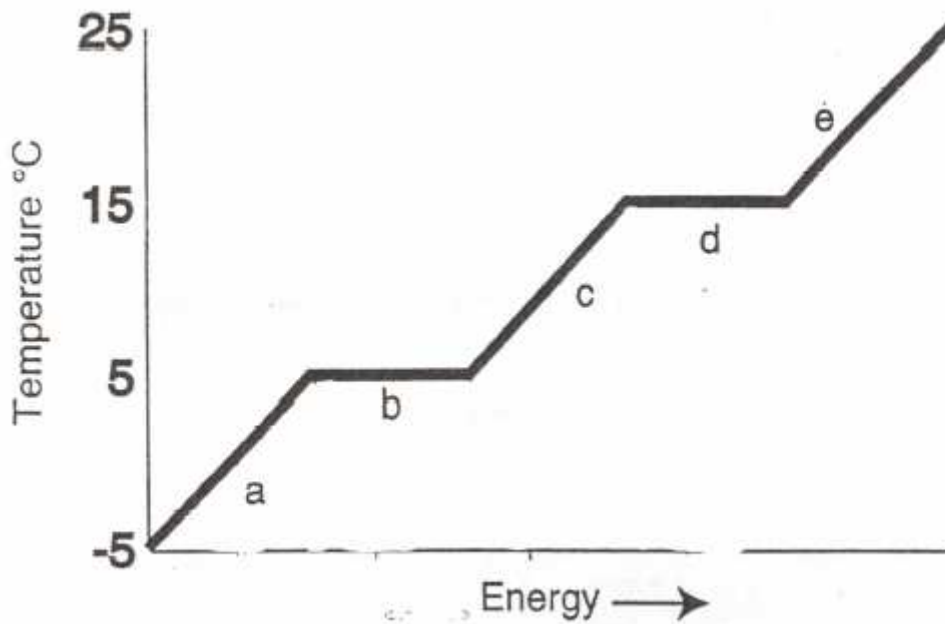
(i) What is the melting point of ice?..... $0^{\circ}..C$

(ii) What is the boiling point of water?..... $100^{\circ}..C$

2, In the below picture fill the empty spaces and write the name of the change of states of matter.



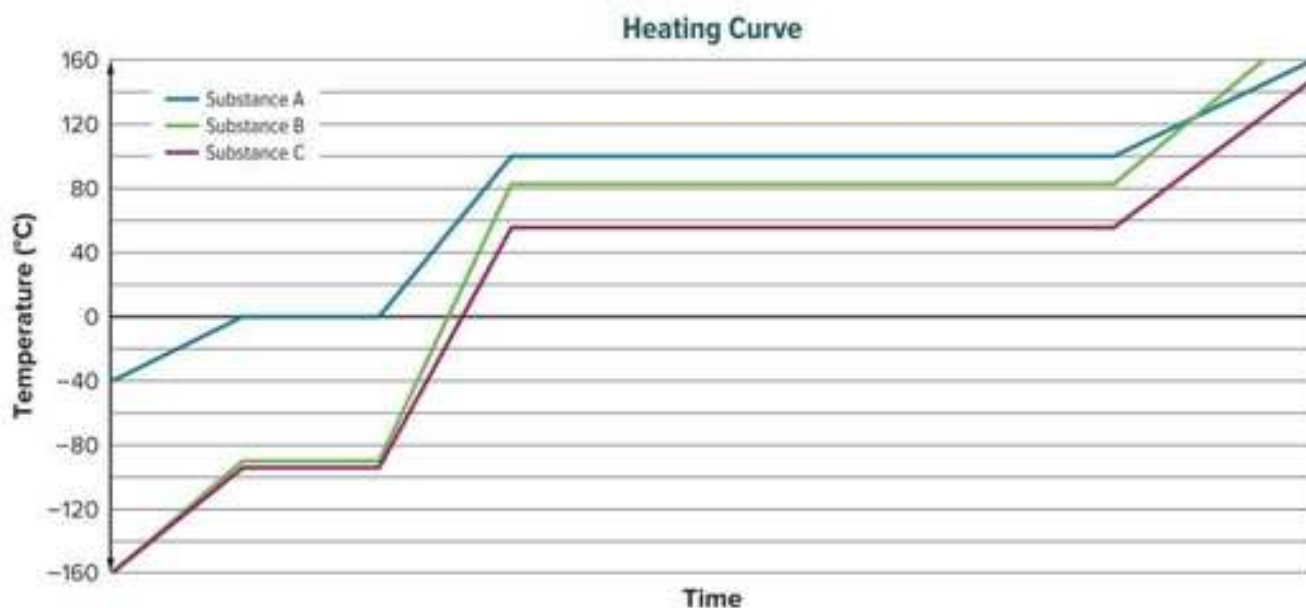
3. Answer the question from the heating curve.



- (i) What is the boiling point temperature of the substance? **15°..C**.....
- (ii) What is the melting point temperature of the substance? **5°..C**.....
- (iii) Which area or areas of the curve show a change in the potential energy of the particles?.....**b, d**.....
- (iv) Which area or areas of the curve show a change in the kinetic energy of the particles?.....**a, c, e**.....
- (v) What happens to the temperature when there is a change of state?
.....**The temperature remains constant**.....
- (vi) What letter represents the melting of the solid?**b**.....
- (vii) What letter represents the vaporization of the liquid?**d**.....
- (viii) What letter represent the solid state?.....**a**.....
- (ix) What letter represent the liquid state?.....**c**.....
- (x) Which letter represent the gaseous state?.....**e**.....
- (xi) In what part of the curve would the particles of substance be farthest apart?**e**.....
- (xii) In what part of the curve would the particle of substance have the lowest kinetic energy?.....**a**.....
- (xiii) In what part of the curve would the particle of substance have the greatest kinetic energy?.....**e**.....
- (xiv) What happens to the energy when there is a change of state?

When the state is changing, the energy is becoming potential energy. The distance between the particle increases.

4. A group of students collected data using a similar procedure as the lab *Phase Changes*. They tested 100 mL of three different substances. The plot below was compiled from their data.



- (i) Which substance A, B or C represent the heating curve of ice?**Substance A**.....
- (ii) Complete the table below using the data plot.

Substance	Melting Point (°C)	Boiling Point (°C)
A	0°C	100°C
B	-90°C	85°C
C	-95°C	55°C

- (iii) At which points are the potential energy of the substance changes?

.....**Melting point and Boiling point**

- (iv) Why each substance has a unique melting and boiling point?

Each substance particles have different forces of attraction.

- (iv) At which temperature are the potential energies of substances A changing? **0°C and 100°C**.....

- (v) At which temperature are the potential energies of substances B changing? **-90°C and 85°C**

- (vi) At which temperature are the potential energies of substances C changing? **-95°C and 55°C**

- (vii) Which substance has higher melting and boiling point? Give reason.

Substance A, the greater the attraction between the particles, the greater the melting and boiling point

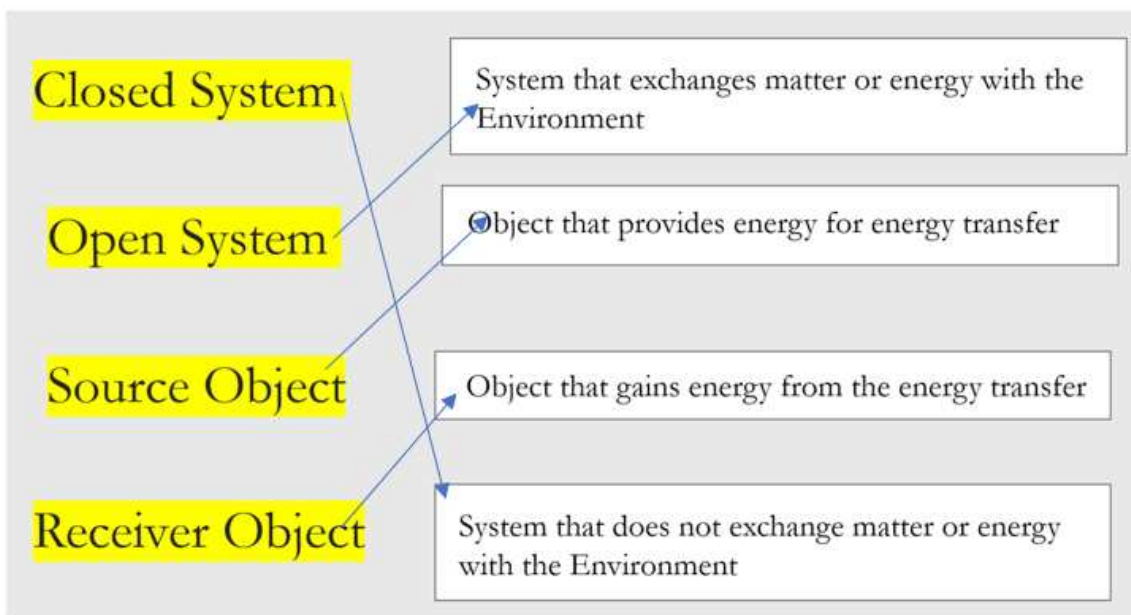
Explain how thermal energy transfer, and compare between closed and open systems, and assign source and received objects . Textbook, energy flow diagrams, lab 59, 60, 61,63

1. Answer the questions based on the image.



- (i) The microwave shown above is an example for**Open system**.
- (ii) Which is the source object ?.....**microwave**.....
- (iii) Which is the receiver object?.....**vegetable**.....

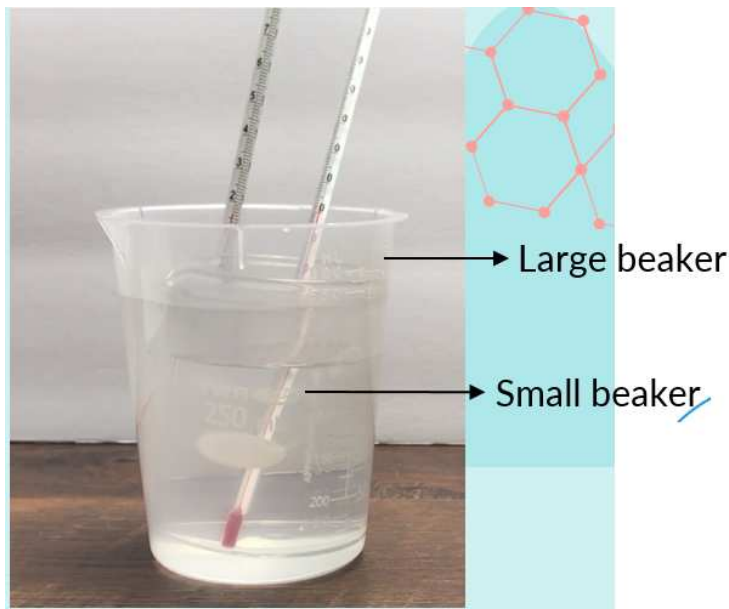
2. Match the following:



3. The water in the ice cube tray is 10°C. It is placed in the freezer at 0°C. Add arrows to the figure to **model** the direction of **energy** transfer.



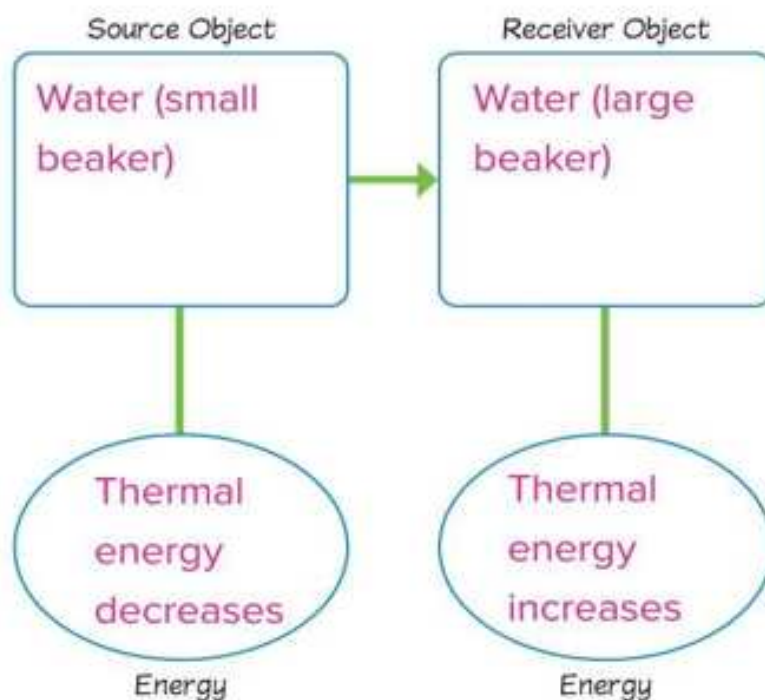
4. The large beaker contains 200ml of cold water. The small beaker contains 200 ml of hot water. The small beaker is kept inside the large beaker. Place the beaker in an undisturbed spot overnight. Use the energy flow diagram to model the components of the system found in the given image. Identify the type of energy involved and whether the energy increased or decreased.



- (i) Heat transfer from...**high temperature**... to**low temperature**....
- (ii) The above image is an ...**open** system.
- (iii) What are the components of the system?

...**large beaker, small beaker, hot water, cold, water, thermometer, air.**

- (iv)

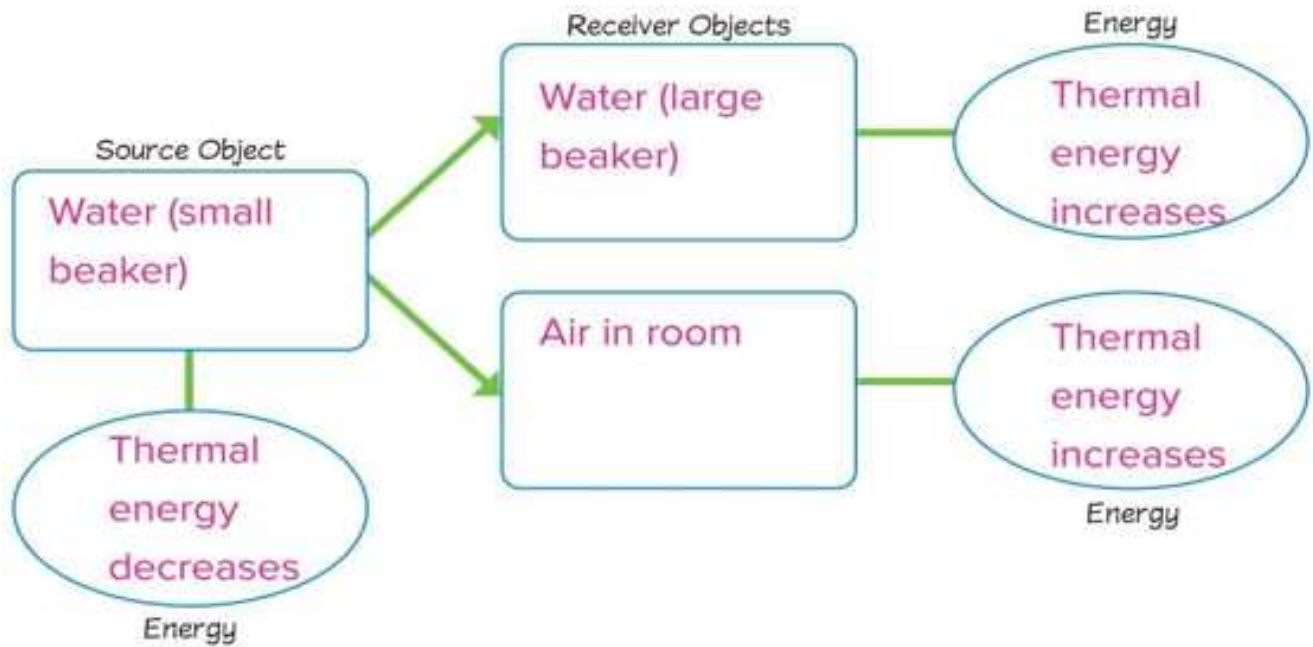


(v) The beakers are kept overnight. What happened to the temperature of the water in the beaker?

Name the process.

The temperature becomes the same. The process is called thermal equilibrium.

(vi) Complete the energy flow diagram for the system after the overnight.



5. When you place a hot piece of toast on a plate, the plate becomes warmer.



(i) Why does the plate become warmer?

The heat is transferred from the toast to the plate.

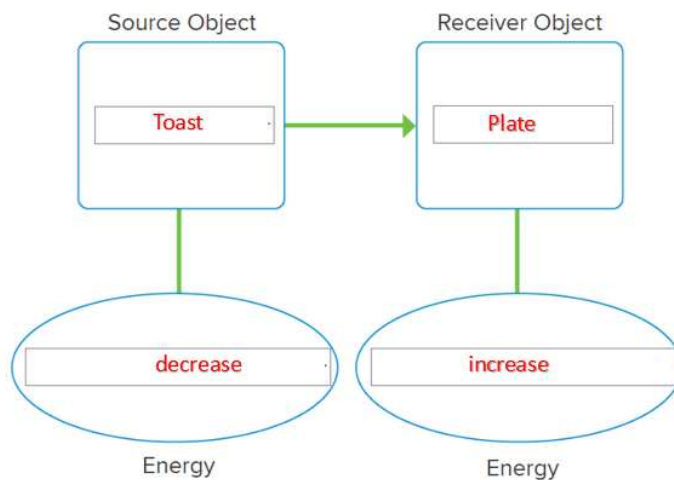
(ii) Name the process of heat transfer.

Conduction

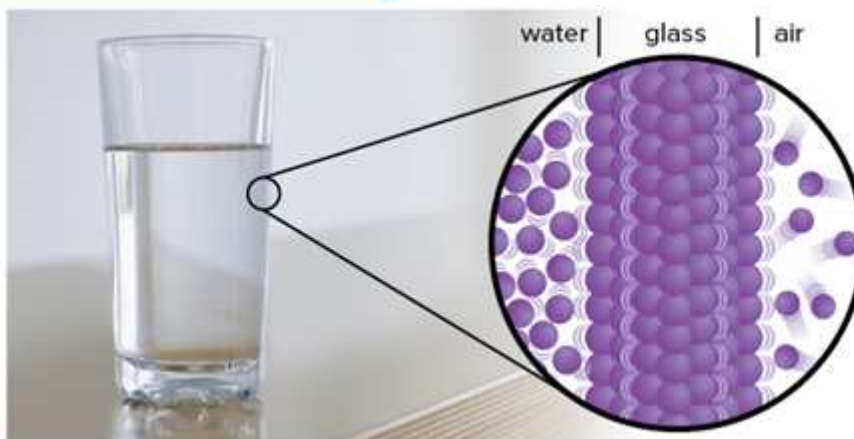
(iii) Which is the source object and which is the receiver object?

Source object - toast and receiver object - plate

(iv) Draw an energy flow diagram for the above example.



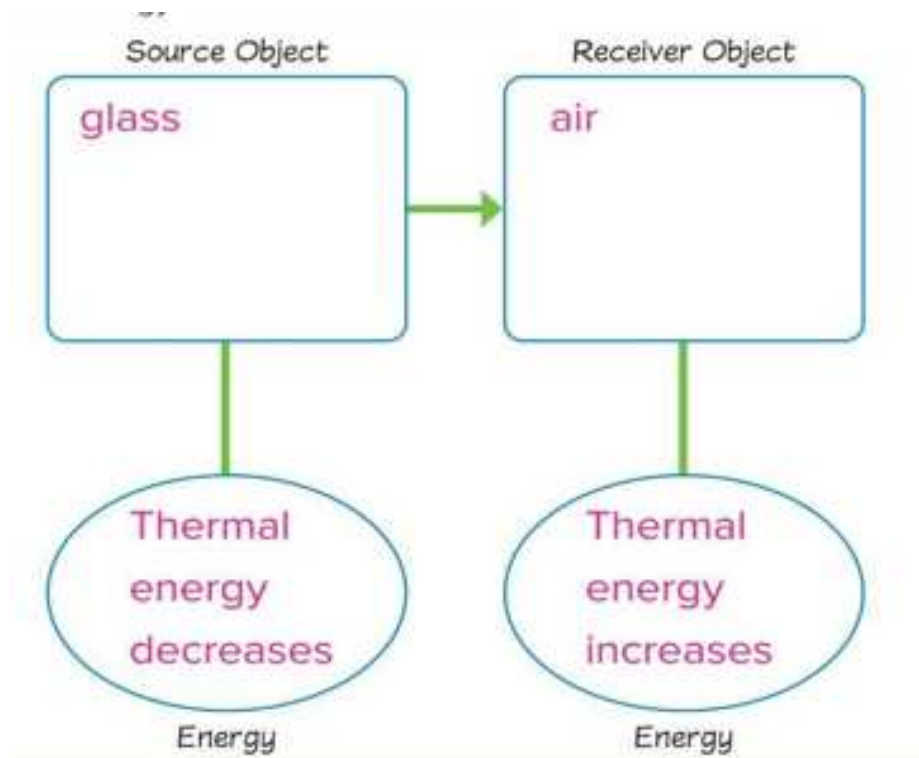
6. Look closely at the motion of the particles modeled in the image above. Use the **energy** flow diagram to **model** the components of the **system** that are transferring energy. Identify the type of energy involved and whether the energy increased or decreased.



(i) Name the process of heat transfer when the thermal energy between particles is transferred by collisions of particles.

.....**conduction**.....

(ii) Complete the energy flow diagram for the above image.



Describe the relationship between thermal energy transfer and mass, represent this relationship in diagram (draw it) textbook, figures, 3D 78

1.
a- Which graph is correct to show the relation between Change in temperature and mass?

B

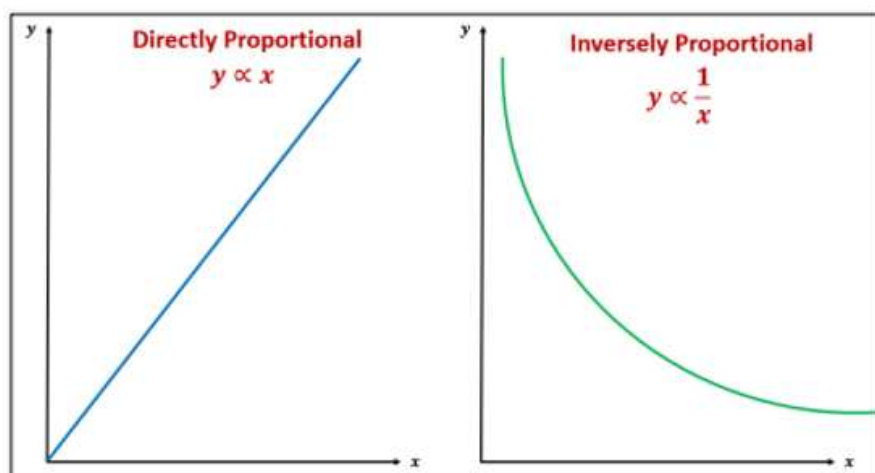
b- What happen to change in temperature when mass of the substance increase.

decreases

c- What is this relation called?

Inversely proportional

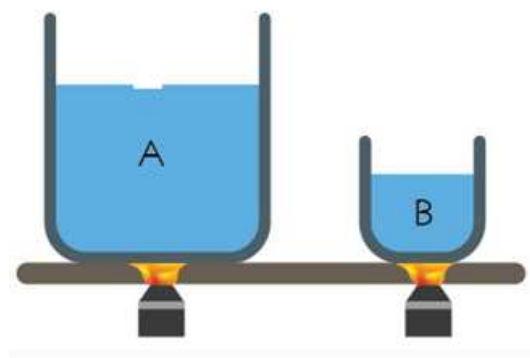
d- Less mass = less particles



A

B

2. Mass is one of the factors that determines the amount of thermal energy in a substance. Is it faster to heat up a small pot of water or a large pot of water?



- (i) Which pot heats up faster? Give reason.

Pot B. Because it has less number of particles.

- (ii) Describe the relationship between mass and change in temperature.

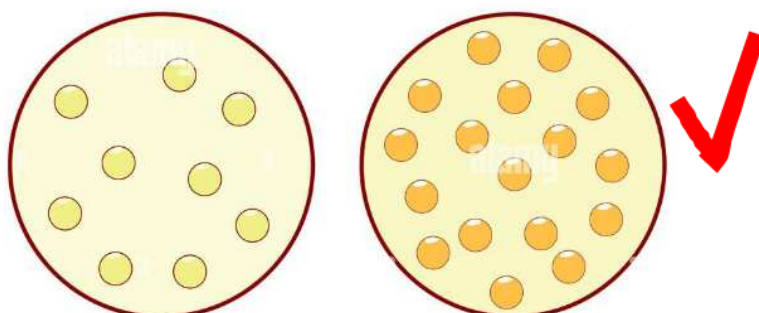
As the mass increases, the change in temperature decreases.

- (iii) Name the relationship between mass and change in temperature

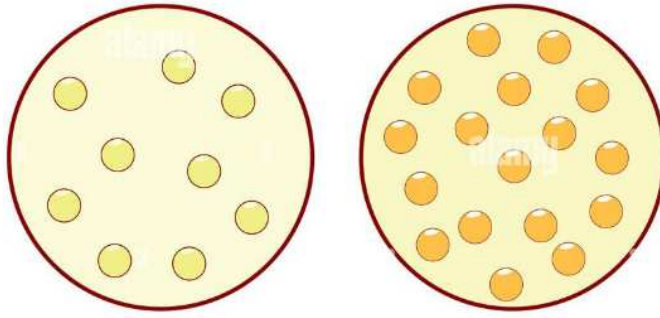
...Inversely proportional...

- (iv) Draw the relationship between mass and change in temperature.

- (v) Circle the image which shows particles with more mass.



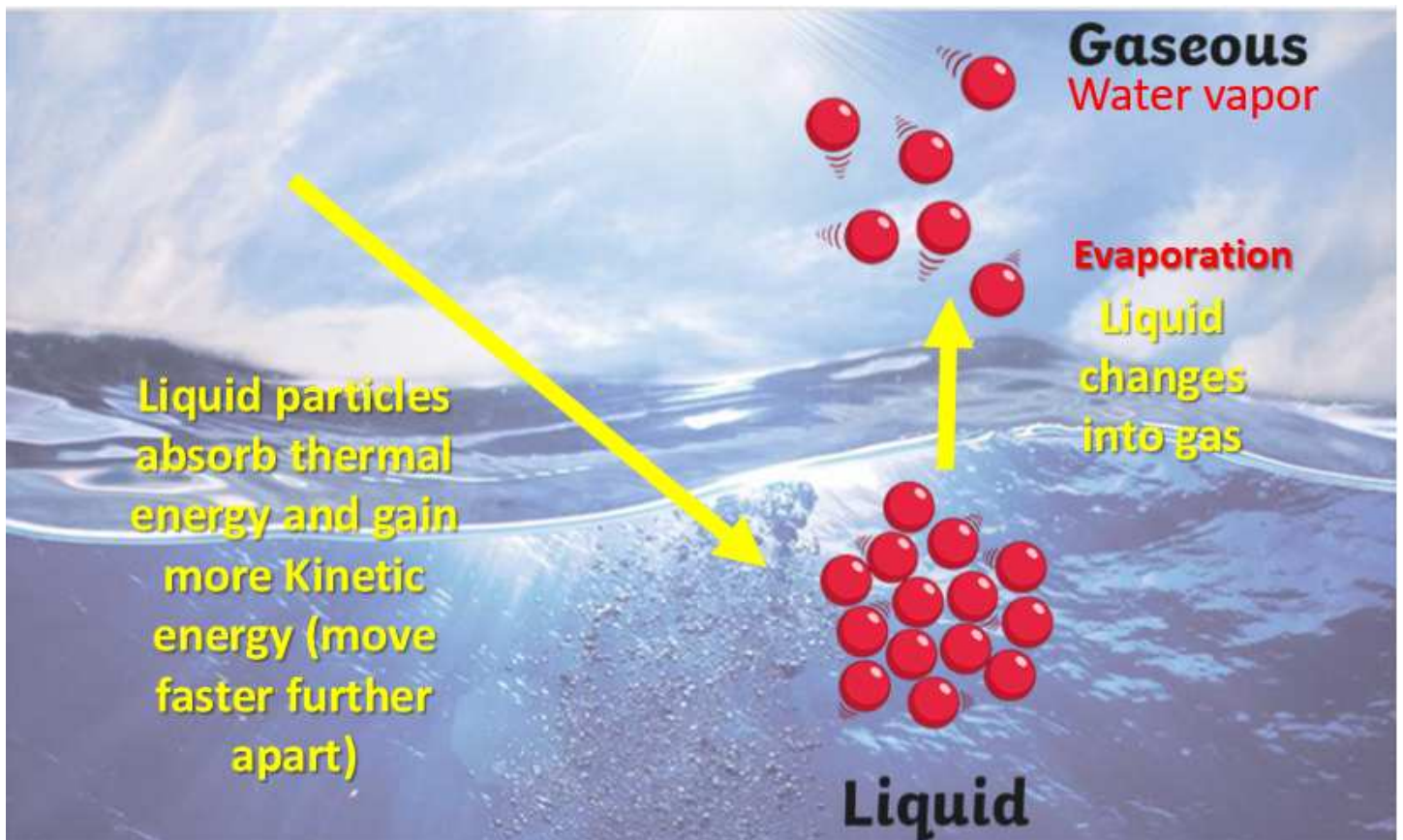
(vi) Draw motion lines to show which image has less change in temperature



1. Assign all the processes that is involved in the water cycle on a digram 2. label the global wind system, the convection cell and lines of latitude textbook, figures, investigations 111, 112, 116 & 153, 177, 178

1.

On the figure below, **model** the process that changes liquid water to water vapor. Label the transfer of **energy** that takes place during this process.



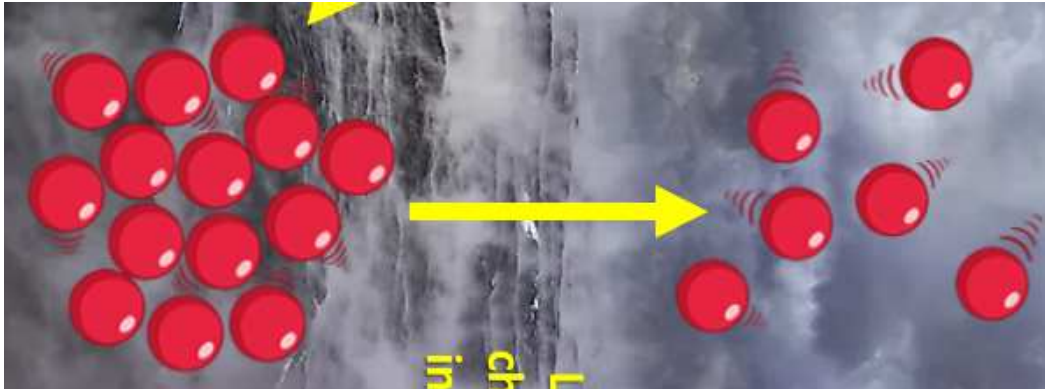
(i) Name the process that changes liquid water to water vapor.

.....**Evaporation**.....

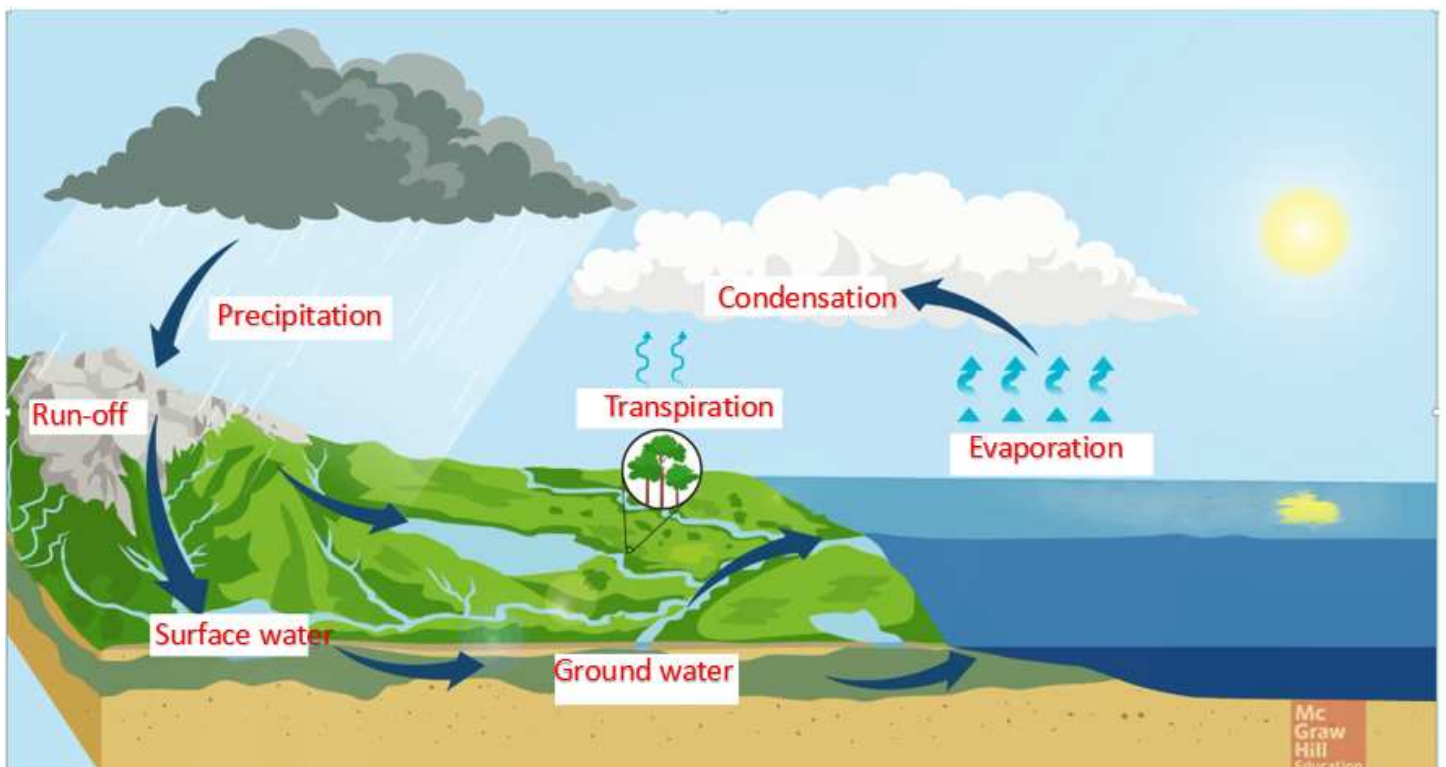
(ii) How does energy from the Sun drive the cycling of matter?

Thermal energy from the Sun causes liquid water on Earth's Surface to evaporate and become water vapor.

(iii) Model the process that changes liquid water to water vapor.



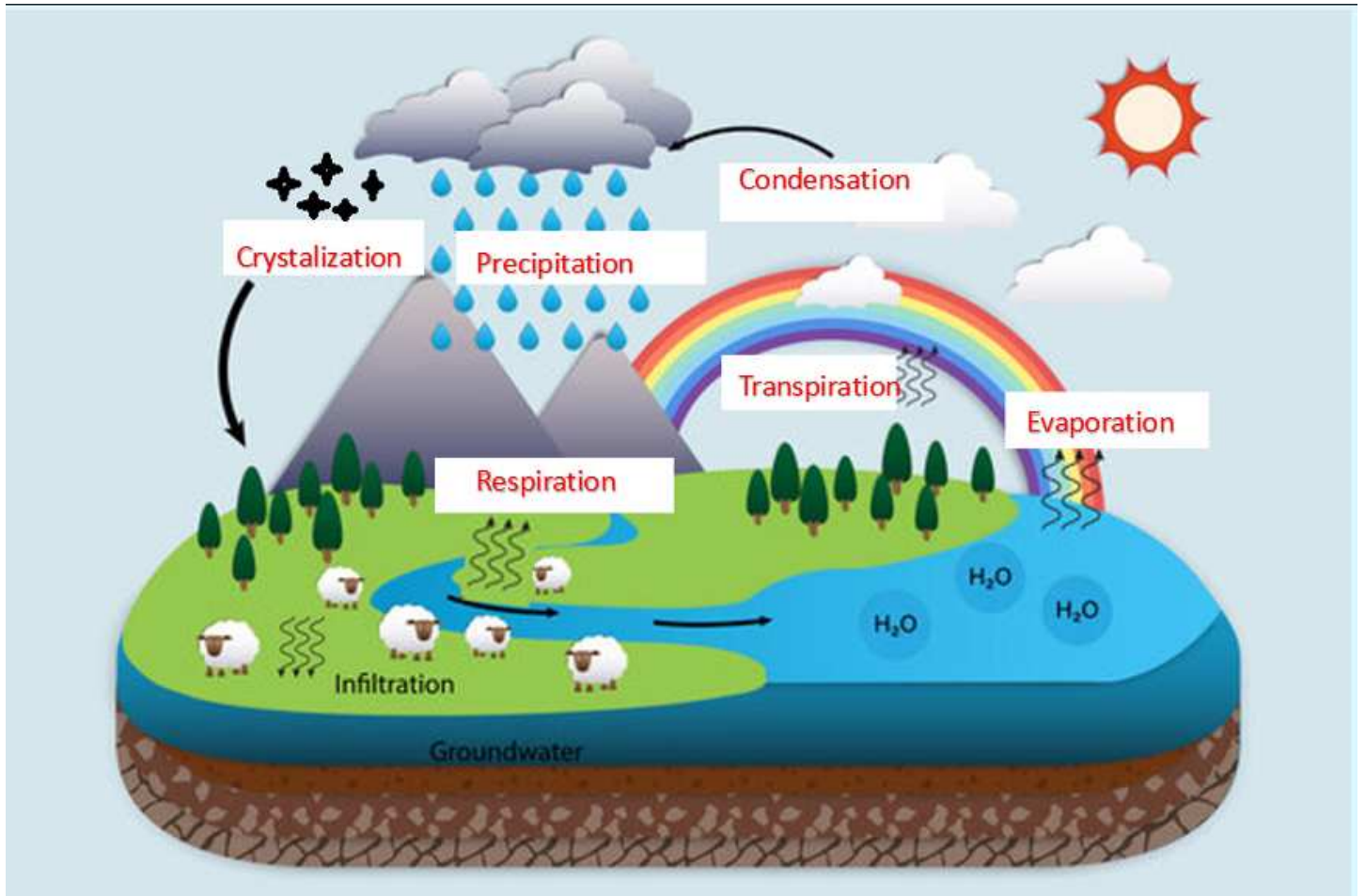
2.(i) Label the water cycle.



(ii) What drives the movement of water in water cycle?

.....**Sun and Gravity**.....

3. (i) Label the water cycle.



(ii) Name the process by which 90% of water vapor enters the atmosphere...**Evaporation**.....

(iii) Name the processes by which 10 % of water vapor enters the atmosphere.

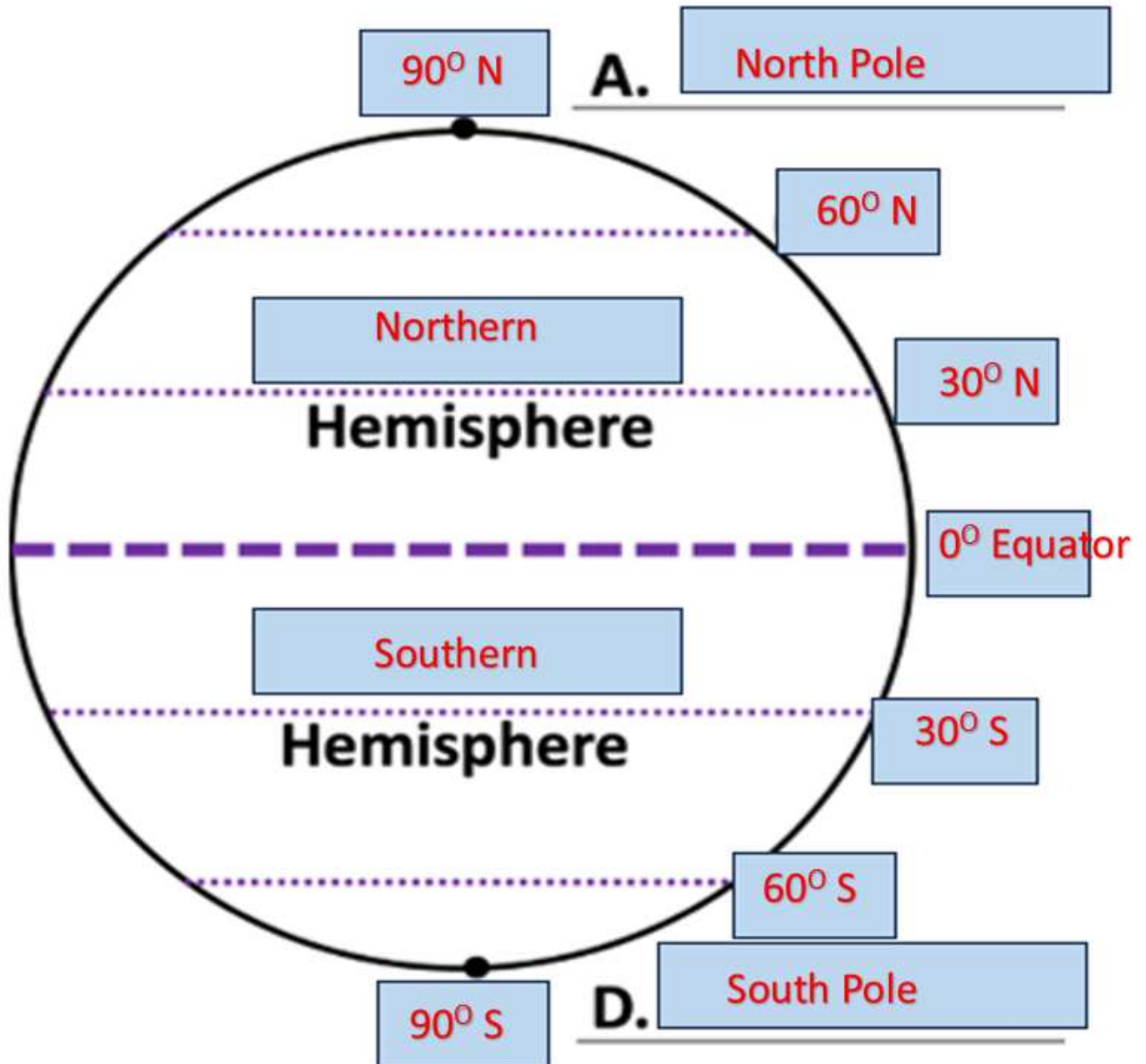
.....**Transpiration and respiration**.....

(iv) Name the process by which liquid turns into crystalline solid...**Crystallisation**.....

(v) During evaporation thermal energy is**absorbed**.....

(vi) During condensation and crystallization thermal energy is**released**.....

4. (i) Label the lines of latitude.



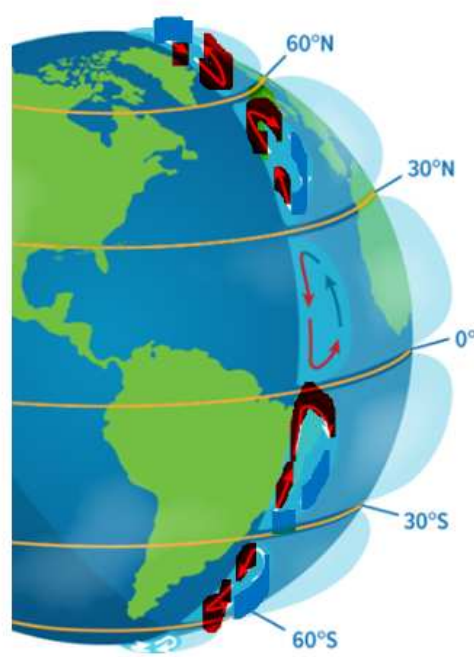
(ii) The angle of incoming sunlight depends largely on.....Latitude.....

(iii) At which part of Earth does the sunlight strike at nearly 90°.....Equator.....

(iv) At which part of Earth receives sunlight at low angles.....poles.....

(v) Which latitude is warmer than other areas of Earth?.....Tropics.....

5. Study the diagram.



(i) How is thermal energy redistributed around the world?

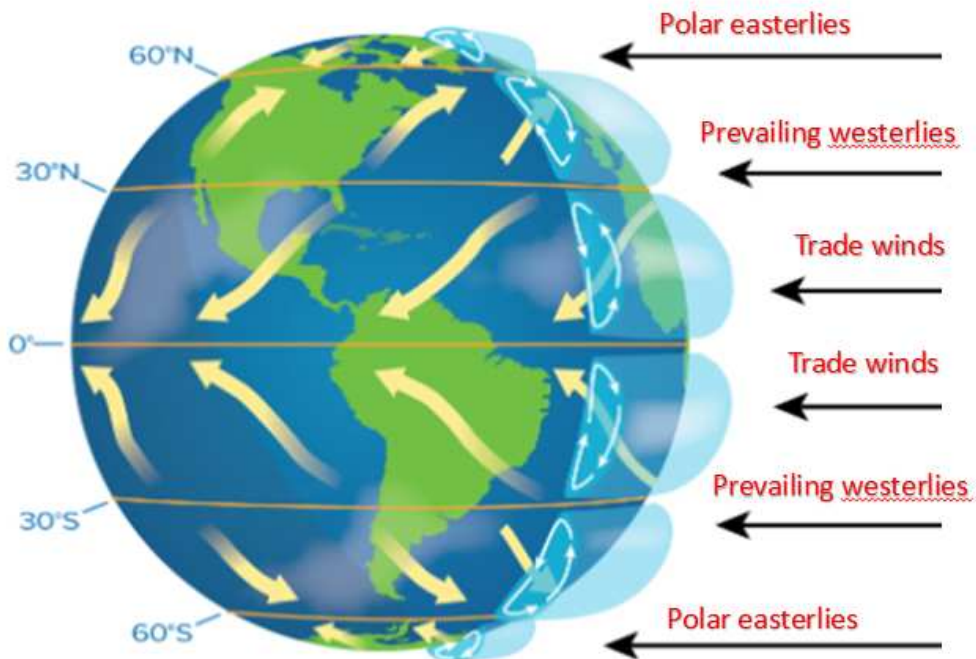
.....By convection cell.....

(ii) How is air molecules close to Earth's surface is heated?

.....By conduction.....

(iii) In the diagram, color the arrows of the cells red for warm or blue for cool.

6. Label the Global wind system.



7. Label the given diagram with (Prevailing westerlies, Polar easterlies, Trade wind) and mark latitude and direction of the global winds.

