

GO	2	3	4	5	6	7	8	9
END								10
25								11
24								12
23								13
22	21	20	19	18	17	16	15	14

# The rules:

**Each player takes turns to answer questions.**

**The question set they use depends on the colour of the square they are on.**

**If Player A is answering the question, Player B or C must ask the question. Don't reveal if they answered it correctly or not after they answer.**

**The player must now roll a dice. Remember what you rolled.**

**The questioner will now reveal the answer to the question. If the question was answered correctly, the player moves forward the number of spaces they rolled on the dice. However, if the question was answered incorrectly, the player moves back the number of spaces rolled on the dice.**

**The first person who gets to the end wins!**

**Remember: don't cheat and have fun!**

**What is a thermal conductor?**

**What is a thermal insulator?**

**What is heat?**

**Do light, shiny materials reflect or absorb heat?**

**Do dark, dull materials reflect or absorb heat?**

**Can radiation occur in a vacuum?**

**What is temperature?**

**What is thermal energy?**

**A material that allows heat to pass through it**

**A material that does not allow heat to pass through it**

**The amount of total thermal energy an object holds**

**They reflect heat**

**They absorb heat**

**Yes**

**The average of the particle's kinetic energy. Usually measured in degrees Celsius**

**A type of energy store. It is converted to kinetic energy which vibrates and makes objects feel hot.**

**How tightly packed are the particles in solids?**

**How tightly packed are the particles in liquids?**

**How tightly packed are the particles in gases?**

**What is the difference between heat and temperature?**

**What is the process of turning a solid into a liquid?**

**What is the process of turning a liquid into a gas?**

**What is the process of turning a gas into a liquid?**

**What is the process of turning a liquid into a solid?**

**Very tightly, all particles in a pattern.**

**Fairly tightly, all particles are connected but are not in a set pattern and can move around.**

**Very weakly packed: the particles are not touching and can move around freely.**

**Heat is the total thermal energy, whereas temperature is the average kinetic energy.**

**Melting**

**Evaporation**

**Condensation**

**Freezing**

**Where does the energy go if the object is hotter than the surroundings?**

**Where does the energy go if the object is colder than the surroundings?**

**Where does the energy go if the object is the same temperature as the surroundings?**

**Explain the temperature change if the object is hotter than the surroundings**

**Explain the temperature change if the object is colder than the surroundings**

**Explain the temperature change if the object is the same temperature as the surroundings**

**The energy is transferred from the object into the surroundings until thermal equilibrium is reached**

**The energy is transferred from the surroundings into the object until a thermal equilibrium is reached**

**No energy is transferred as the object and surroundings have already reached a thermal equilibrium**

**The object will get colder whereas the surroundings will get hotter**

**The surroundings will get colder whereas the object will get hotter**

**Both objects will stay the same temperature as thermal equilibrium has already been reached**



**Which energy transfer method(s) involves using particles?**

**In which energy transfer method(s) do the particles move far apart in?**

**In which energy transfer method(s) do the particles vibrate on the spot in?**

**Which energy transfer method(s) can occur in a solid?**

**Which energy transfer method(s) can occur in a liquid?**

**Which energy transfer method(s) can occur in a gas?**

**In which energy transfer method(s) do the particles rise and fall to transfer energy?**

**In which energy transfer method(s) do the particles hit each other to transfer energy?**

**Can radiation occur in a vacuum?**

<b>Conduction and convection</b>	<b>Only convection</b>	<b>Only conduction</b>
<b>Conduction and radiation</b>	<b>Convection and conduction</b>	<b>Convection and radiation</b>
<b>Only convection</b>	<b>Only conduction</b>	<b>Yes as it does not involve moving particles.</b>

**Explain convection**

**Explain infrared radiation**

**Explain conduction**

**What is it called when you place two layers of glass with a vacuum between the two layers?**

**What is double glazing used for?**

**Instead of particles, what does infrared radiation use to transfer energy?**

**What is the process of turning a gas into a solid directly (without turning into a liquid)?**

**What is the process of turning a solid into a gas directly (without turning into a liquid)?**

**Do (at room temp) solids usually have a higher or lower boiling point than gases?**

**What is the main law in Isaac Newton's conservation of energy discovery?**

**Do densely packed particles rise or sink?**

The heated particles move in a convection current and the heated particles spread into the non heated areas.

The transfer of energy using waves, not particles and so can occur in a vacuum.

The particles are heated and they vibrate and transfer energy through hitting each other as they vibrate.

Double glazing

To stop heat escaping through conduction or convection. Radiation can still get through.

Waves

Deposition

Sublimation

Solids have a much higher boiling point than gases as gases are already at the highest reacting temp.

Energy cannot be created or destroyed

Densely packed particles sink as they are heavier.