**Hangi answer helper**

|  |  |
| --- | --- |
| **Radiation (question 1)*** Radiation is a type of heat transfer that doesn’t need \_\_\_\_\_\_\_\_\_\_\_\_. Heat energy travels as waves and can travel through an empty \_\_\_\_\_\_\_\_\_.
* The colour of the surface affects whether the radiant energy is absorbed or \_\_\_\_\_\_\_\_\_\_\_. My data showed me that a black surface will \_\_\_\_\_\_\_\_\_\_\_ the most amount of radiant energy. The black metal increased \_\_\_\_\_\_\_\_\_\_. Other dark colours like blue and red were good absorbers of \_\_\_\_\_\_\_\_\_\_\_ too.
* White and silver are poor absorbers and emitters of radiant energy. The white surface only increased by \_\_\_\_\_\_\_. White and Silver \_\_\_\_\_\_\_ radiant energy.
* The reason why the corrugated iron sheets are silver is because silver will \_\_\_\_\_\_\_\_ the radiant heat energy from the fire Therefore most of the heat energy is used to \_\_\_\_\_\_ the hangi stones rather than the sheets. If the metal had been black, red or blue the heat energy would have been \_\_\_\_\_\_ rather than reflected back to the fire. So this means the stones get \_\_\_\_\_\_

**Convection and conduction (question 2)*** Convection is the type of heat transfer that happens in \_\_\_\_\_\_ and \_\_\_\_\_\_. Particles in a gas or liquid will start to move \_\_\_\_\_\_\_when heated. Particles that have gained energy and are moving faster will take up more\_\_\_\_\_\_\_ and becomes less \_\_\_\_\_\_\_\_. Less dense particles will\_\_\_\_\_\_\_ and be replaced by more dense particles. This is what we call a \_\_\_\_\_\_\_\_\_\_\_\_ current.
* The food in the hangi is placed above the \_\_\_\_\_\_ stones. The food is getting cooked because of the convection current. The air particles and the steam particles down by the hot stones get heated by and become \_\_\_\_ \_\_\_\_\_\_\_\_ and rise. The rising particles will then transfer their energy to the \_\_\_\_\_\_\_\_\_ cooking it nicely.
* Conduction is a type of heat transfer that only happens in \_\_\_\_\_\_\_\_. The particles in a solid can vibrate but not move around freely. When a solid is heated the particles closest to the heat source will start to\_\_\_\_\_\_\_. They will then pass on the heat energy to the nearby particles as they \_\_\_\_\_\_\_\_ with them. \_\_\_\_\_\_\_\_\_\_\_ do not have particles that are free to vibrate so much do not pass on heat energy as well as conductors.
* The hangi has been insulated by placing dirt on top of the hole. The insulating soil prevents heat from \_\_\_\_\_\_ through the top of the hangi. Therfore the hangi stays hot and the kai cooks ka pai
 | Heat transfer words to use...**radiation**...shiny... reflect...black... absorb...IN THIS CASE…**Convection**...density...rise/descend...convection current...IN THIS CASE…**Conduction**...particle vibration... collidemetals/ insulators...IN THIS CASE… |