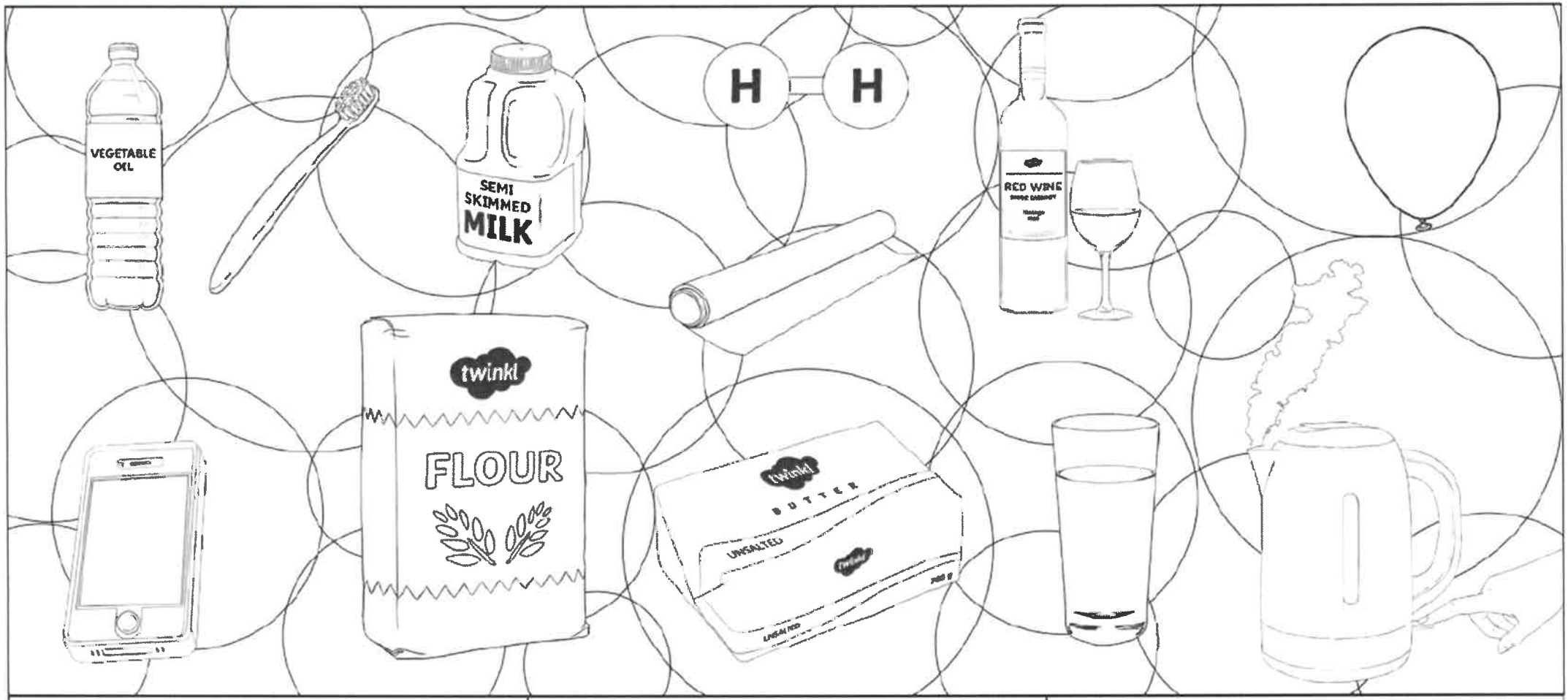
# Solids, Liquids and Gases Colouring Activity




| solid - purple | liquid - blue | gas - green |
|---|---|---|

# Solids, Liquids, and Gas

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| m | f | i | k | t | f | h | e | a | t | r | r | o | w |
| e | s | r | c | m | l | o | t | w | f | f | d | i | s |
| l | b | q | o | c | s | y | l | i | q | u | i | d | s |
| t | u | q | n | n | q | n | u | e | g | z | c | o | n |
| a | c | e | d | j | h | a | r | d | w | e | e | a | x |
| l | d | v | e | h | g | q | x | a | j | k | y | c | p |
| r | w | d | n | l | u | r | w | c | t | i | m | t | i |
| a | b | f | s | k | e | v | a | p | o | r | a | t | e |
| l | x | c | a | h | w | s | t | e | g | l | f | i | b |
| h | a | p | t | n | b | a | e | d | a | h | a | g | v |
| s | o | l | i | d | s | m | r | y | s | n | z | e | n |
| j | n | r | o | u | g | h | g | b | t | v | i | a | s |
| m | b | g | n | i | k | p | d | x | j | m | k | a | y |
| e | o | z | j | s | z | c | v | h | p | a | r | t | s |

| | | |
|---|---|---|
| solids | hard | ice |
| liquids | rough | water |
| gas | melt | parts |
| condensation | evaporate | heat |

Can you fill in the missing words,
using the word bank below?

# Changing State

| | | | | |
|---|---|---|---|---|
| below 100°C | evaporates | condenses | freezes | |
| heat | cool | melts | 0°C | 100°C |
| 0°C | cool | heat | | |

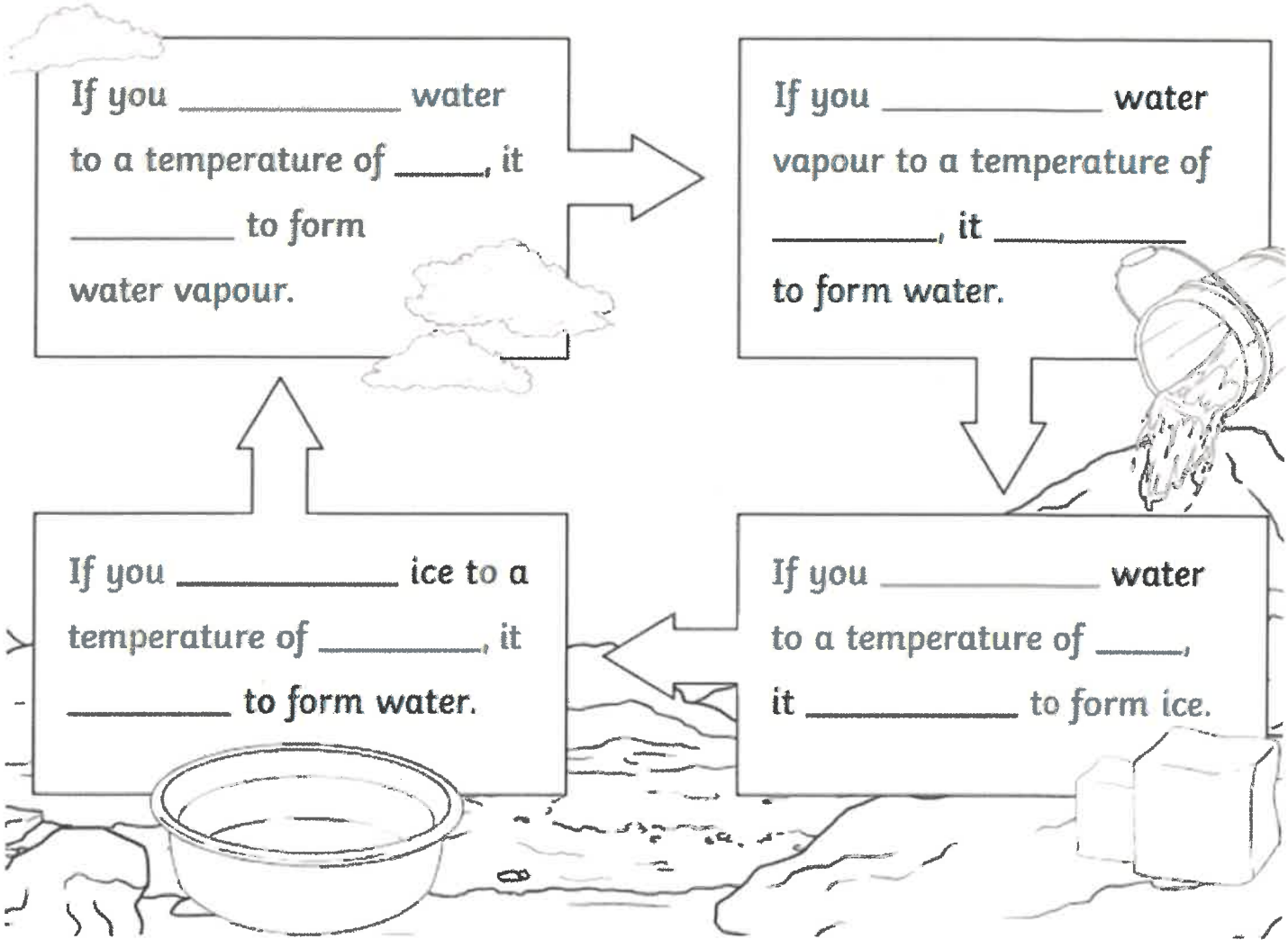
Using the words above complete the sentences below.

If you _____ water to a temperature of _____, it _____ to form water vapour.

If you _____ water vapour to a temperature of _____, it _____ to form water.

If you _____ ice to a temperature of _____, it _____ to form water.

If you _____ water to a temperature of _____, it _____ to form ice.



# Solids, Liquids and Gases

W K Y A L E F T I C E C
C O N D E N S A T I O N
U Y U N S R V U C P M T
P S P O E F A M G O R I
U G R T L Q P E Z A V N
D Y A C C X O L E I S G
D W S K I Z U T N N Z V
L N O I T A R O P A V E
E W L B R L I Q U I D H
Y P I M A V O D U L E Z
K P D Y P A Q S P A N S
I E U G V G T C T E O K

solid
liquid
gas
condensation
evaporation
puddle
melt
vapour
ice
water
particles
heat

Sapphires

# States of Matter: Solid, Liquid or Gas

**Across**

2. Materials in this state take the shape of the container they are in. (6)

4. Solids always take up the same amount of this. (5)

5. The particles in a solid are arranged in a regular pattern and they only move by _____ (9)

7. This gas is used to make balloons float. (6)

9. Gases can be _____ because their particles are far apart and they have space to move into.

11. What type of liquid is often added to coffee or tea?(4)

**Down**

1. The name of a solid which is used for making lots of objects such as toys and drinks bottles. (7)

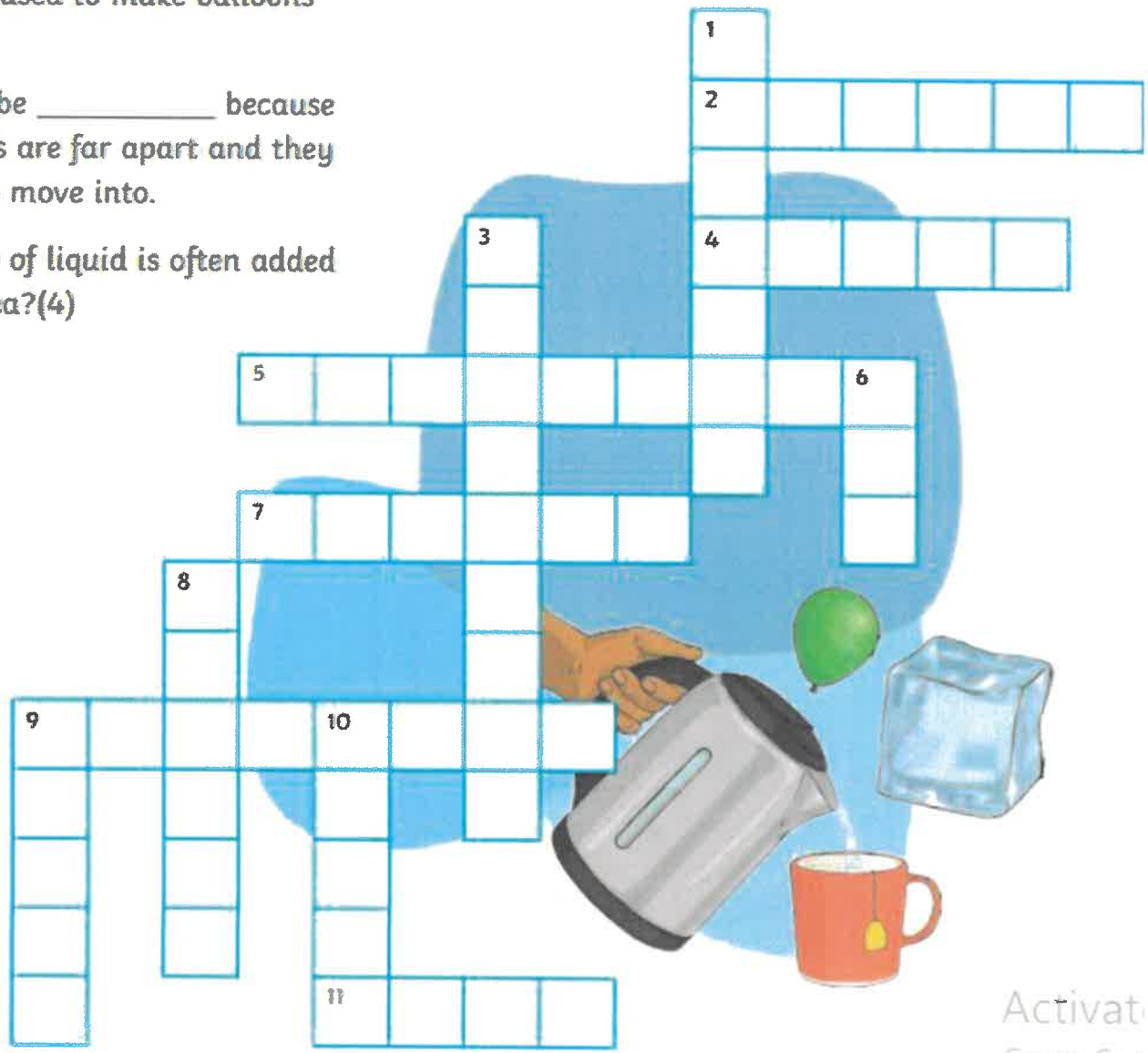
3. All materials are made from these. (9)

6. A _____ can spread out and completely fill the container or space it is in. (3)

8. Liquid can be _____ from one container to another. (6)

9. What state are materials in when they keep their shape unless a force is applied to them? (5)

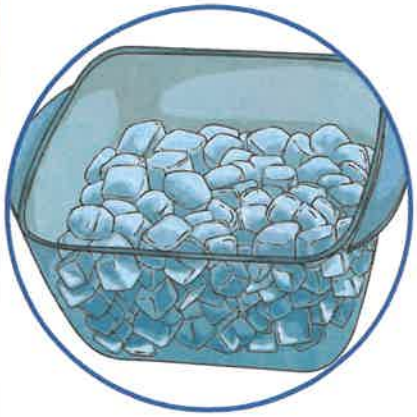
10. The name of the gas which comes out of the kettle when the water boils. (5)

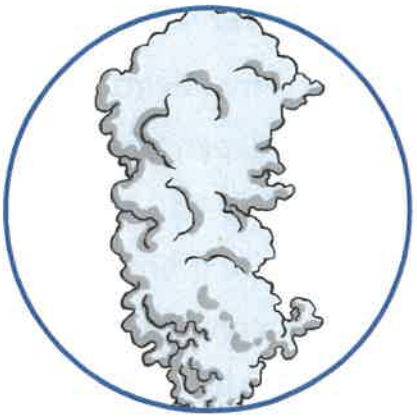


Amethyst

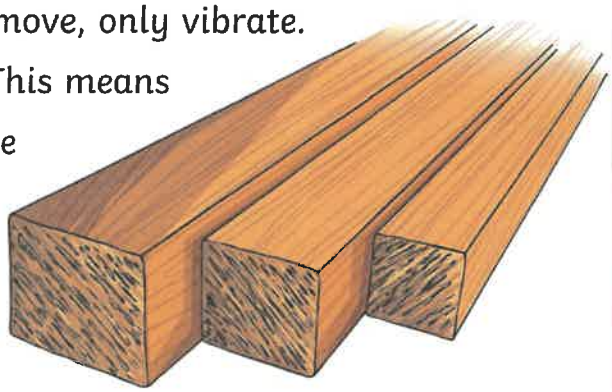
# States of Matter

All matter is made up of atoms, but did you know there are three common states of matter? They are solid, liquid, and gas.





Atoms in a solid state of matter are closely packed together. In fact, they are so tightly packed that they really cannot move, only vibrate. Solids have a definite shape and volume. This means the shape and volume do not change. Some examples of solids are a piece of wood, your family's computer, your favourite car, and an ice cube.

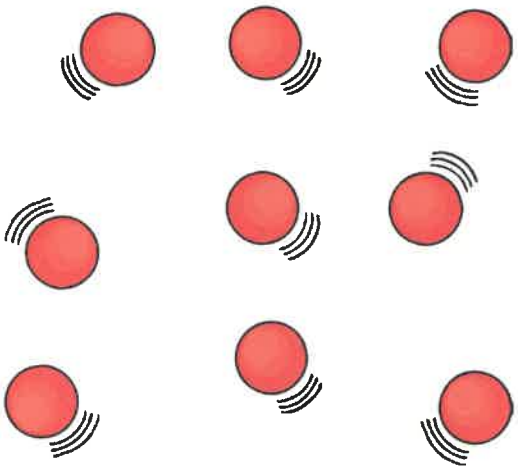


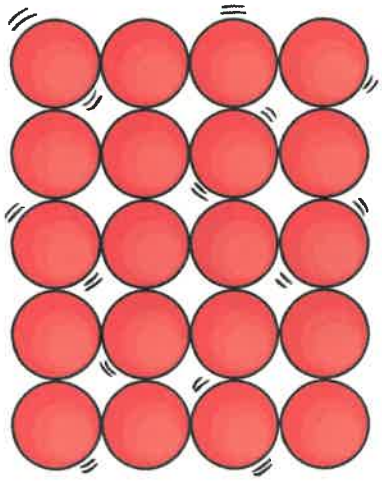
Atoms in a liquid are not as closely packed together as a solid. They are in an organised order but can move a little bit. Liquids have a definite volume but take the shape of the container they are in. For example, if you poured a cup of water into a cylinder or cube, the water will take the shape of the cylinder or cube. Regardless of the container, its volume (one cup) will remain the same. Some examples of liquids are water, oil, and juice.

Amethysts

## States of Matter

Atoms in a gas move freely. They are not in an organised arrangement and have random motion. They have an indefinite volume and shape. This means their volume and shape change depending on where they are. For example, if you put steam into a big soup pot or into a box, the steam will spread out in each container to fill the volume and shape of the container. Some examples of gases are water vapour, oxygen, and nitrogen.





Did you know there is actually a fourth state of matter? It is called plasma. Plasma is the most common state of matter in the universe (but not very common on Earth). Atoms in plasma move very fast (have lots of kinetic energy), and their electrons group together so the atoms act as one instead of different parts. Plasma is present in stars, fluorescent lights, and even some televisions.

There is also a fifth state of matter called Bose-Einstein condensates (BEC). BEC matter joins all molecules together to create a "super-molecule." Though not very common, scientists believe BEC matter is found in black holes.

Amethysts -

States of Matter

# Questions

1. What is the most common state of matter in the universe?
   - ○ solid
   - ○ liquid
   - ○ gas
   - ○ plasma
2. Which state of matter is thought to be present in black holes?
   - ○ liquid
   - ○ Bose-Einstein condensates
   - ○ plasma
   - ○ gas
3. Which state of matter has an indefinite volume and shape?
   - ○ gas
   - ○ solid
   - ○ liquid
   - ○ plasma
4. What makes each state of matter different?
   - ○ amount of atoms
   - ○ movement (energy) of atoms
   - ○ size of atoms
   - ○ shape of atoms
5. What states of matter were present in your breakfast this morning? (List the item and its state of matter)

   _____

   _____

   _____
6. Can the same molecules be changed from one state of matter to another? Provide at least one example.

   _____

   _____

   _____