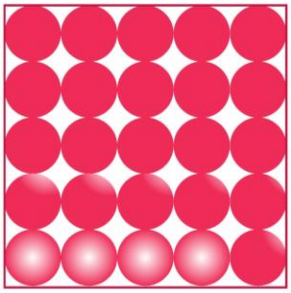
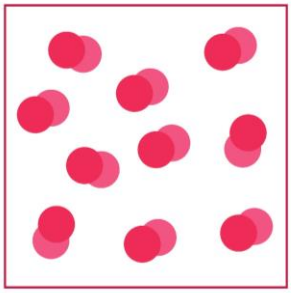
Modelling particles in a solid, liquid and gas

1. Label each of these three states of matter.





2. Use these words to fill in the gaps below for each statement

over	compressed	vibrate	poured	shape	tightly	far	quickly

Gas

The particles are very _____ apart .

The particles move very _____ and can be _____.

Liquid

The particles can move _____one another.

Liquids have a fixed volume and can be _____.

Solid

The particles are _____ packed together and can only _____.

Solids have a fixed _____.

Modelling particles in a solid, liquid and gas

You have been provided with materials to use to create particle models of a solid, liquid and gas.

Sketch your models here and annotate them with the materials you used.

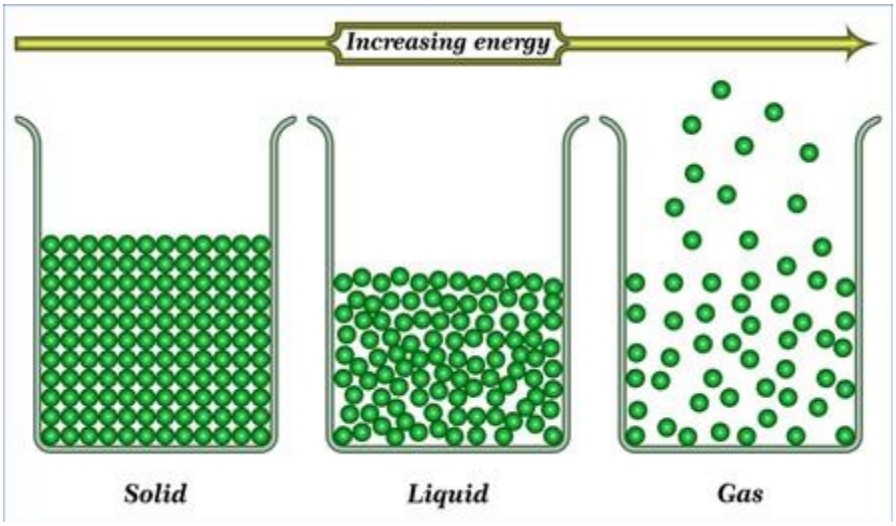
Questions.

1. How do your models help to understand how particles are arranged in a solid, a liquid, and a gas?

Modelling Particles in a solid, liquid and gas

2. What improvements could you make to your model?

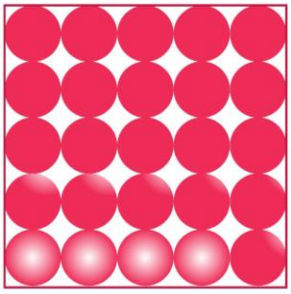
Challenge



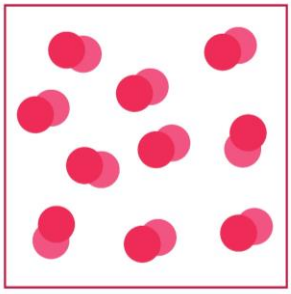
Compare your model to the drawn particle models above. What are their strengths and weaknesses?

Modelling particles in a solid, liquid and gas

1. Label each of these three states of matter.



solid



liquid

gas

2. Use these words to fill in the gaps below for each statement

over compressed vibrate poured shape tightly far quickly

Gas

The particles are very ___far___ apart .

The particles move very ___quickly___ and can be ___compressed___.

Liquid

The particles can move ___over___ one another.

Liquids have a fixed volume and can be ___poured___.

Solid

The particles are ___tightly___ packed together and can only ___vibrate___.

Solids have a fixed ___shape___.

Modelling particles in a solid, liquid and gas

You have been provided with materials to use to create particle models of a solid, liquid and gas.

Sketch your models here and annotate them with the materials you used.

Students' own answers – could also take photos if permitted

Questions.

1. How do your models help to understand how particles are arranged in a solid, a liquid, and a gas?

Lots of possible answers, for example:

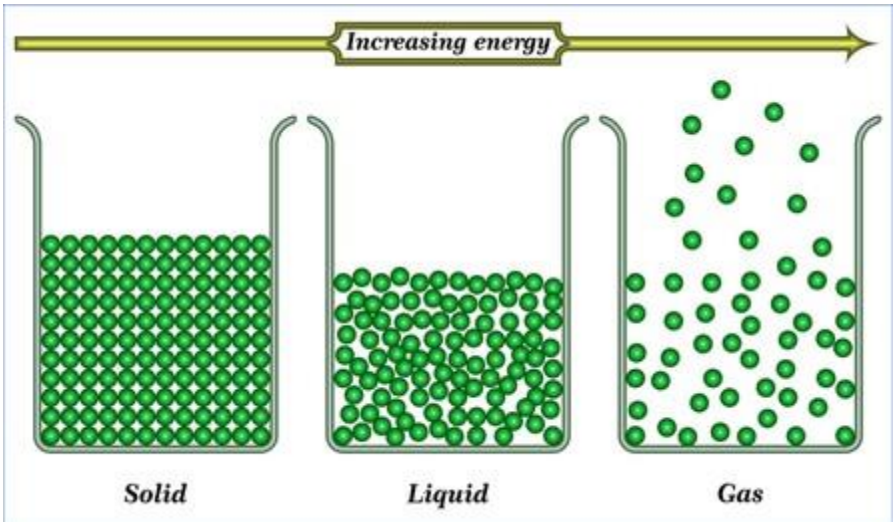
- Show how particles are arranged
- Particles close together in solid
- In a regular pattern in solid
- No room between particles in solid and liquid so cannot be compressed etc.

Modelling Particles in a solid, liquid and gas

2. What improvements could you make to your model?

Students' own answers – possibilities may not make 3D model, show movement of particles, solid not in a regular shape etc.

Challenge



Compare your model to the drawn particle models above. What are their strengths and weaknesses?

Students' own answers – possible answers:

- Model 3D drawing 2D
- Easier to draw picture that make 3D model