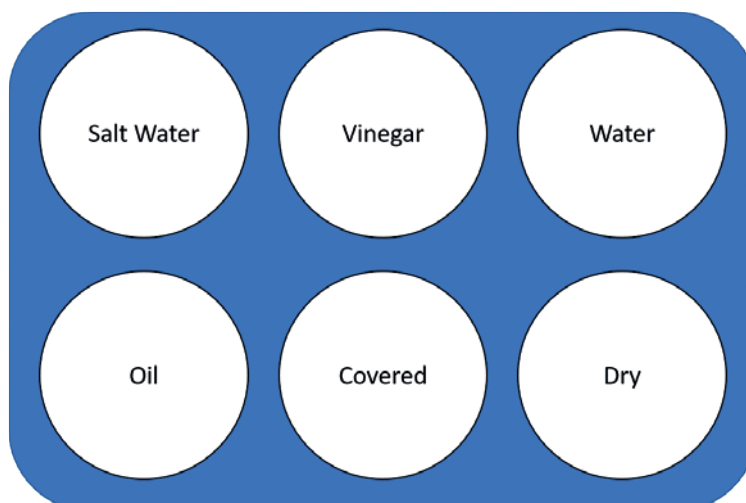# Exploring rusting

Equipment

- Steel wool
- Protective gloves
- Container(s)
- Cooking oil
- Water
- Table salt
- Vinegar
- Cling wrap

1 Label your pots, or draw a diagram to show which pot will contain which substance:

| Salt Water | Vinegar | Water |
| Oil | Covered | Dry |

2 Using separate containers for each fluid, put 150ml fresh, clean cold water in one.

3 Add about a tablespoon of salt to 150ml of water in a second container, stir.

4 Add 150ml of malt vinegar or distilled vinegar to another container.

5 Pour 150ml of oil into a fourth container.

6 Add a small ball of steel wool, roughly the same size to each other, to each container.

7 Leave them to soak for a few minutes, turning them over in the container, until it is well soaked.

8 Add a small ball of steel wool to one of the clean labelled pots, and use the cling wrap to cover the dry steel wool in the container.

9 Place all 6 containers together to one side, where they can be left undisturbed for a few days.

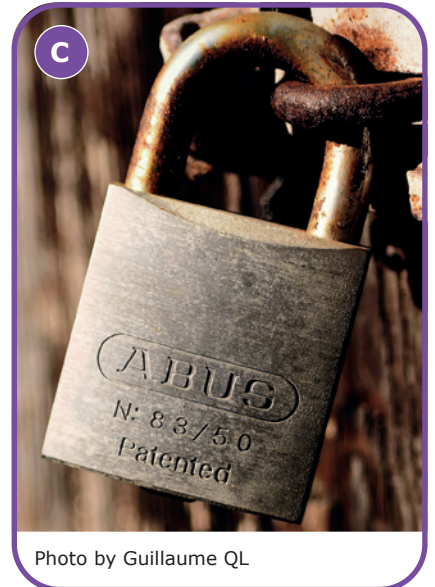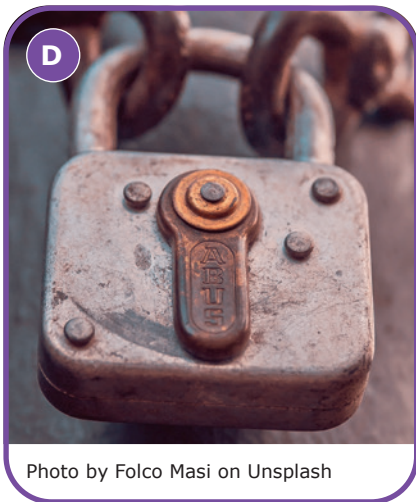**10** What has happened to the steel wool?

Padlocks

Photo by FLY:D on Unsplash

Photo by Markus Winkler on Unsplash
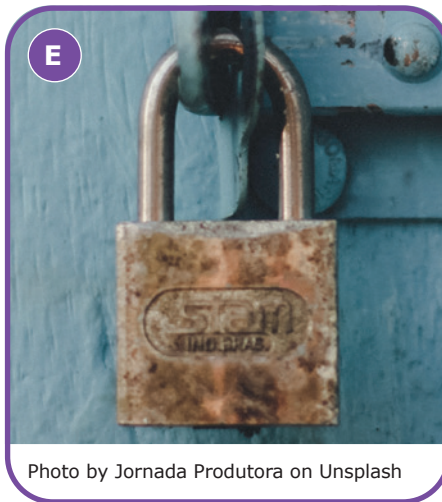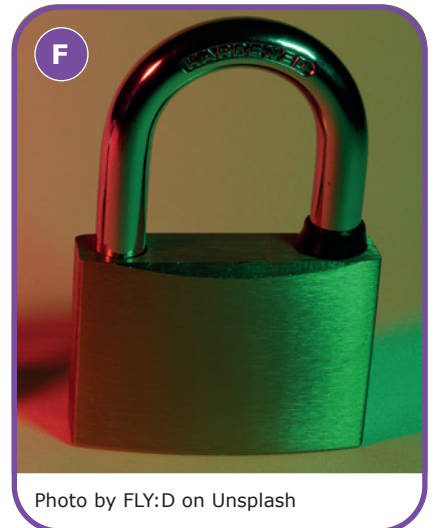
Photo by Guillaume QL

Photo by Folco Masi on Unsplash

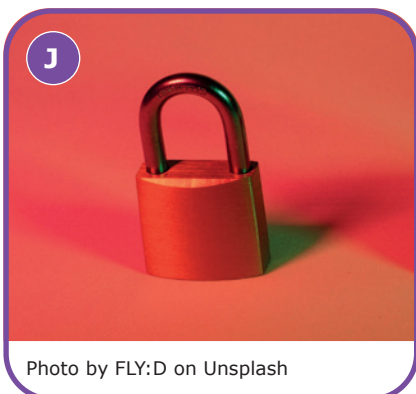Photo by Jornada Produtora on Unsplash

Photo by FLY:D on Unsplash

Photo by Cristina Gottardi on Unsplash

Photo by Markus Winkler on Unsplash

Photo by karol rosales on Unsplash

Photo by FLY:D on Unsplash

Padlocks record sheet 1

Pont des Arts padlock challenge
Padlock measurements

Padlock	Height (mm)	Width (mm)	Mass (g)
A			
B			
C			
D			
E			
F			
G			
H			
I			
J			

Calculate the mean average height:

Calculate the mean average width:

Calculate the mean average mass:

Padlocks record sheet 2

Pont des Arts padlock challenge
Padlock measurements

Padlock	Height (mm)	Width (mm)	Mass (g)
A			28
B			43
C			41
D			53
E			36
F			66
G			20
H			160
I			92
J			13

Calculate the mean average height:

Calculate the mean average width:

Calculate the mean average mass:

Padlocks record sheet – answers

Pont des Arts padlock challenge
Padlock measurements

Padlock	Height (mm)	Width (mm)	Mass (g)
A	40	28	28
B	52	34	43
C	61	34	41
D	43	40	53
E	50	27	36
F	55	37	66
G	29	20	20
H	76	46	160
I	62	35	92
J	26	15	13

Calculate the mean average height:

(40+52+61+43+50+55+29+76+62+26) = 494 / 10 = 49.4mm

Calculate the mean average width:

(28+34+34+40+27+37+20+46+35+15) = 316 / 10 = 31.6mm

Calculate the mean average mass:

(28+43+41+53+36+66+20+160+92+13) = 552 / 10 = 55.2g