Safety signs task

**Virtual tour of Safety Signs in a corridor and adjacent areas**

The text that appears in the info box on screen is reproduced here. There are questions to help you understand what the various signs mean and to explain how the building and laboratories are designed for safe working.

On all of the laboratory doors there are blue signs - Eye protection must be worn. Next to the door is a rack for safety spectacles. Why are they positioned here?

There are small blue circular signs on all doors - Fire door keep shut. Why is this instruction so important? What is a “Fire door”? What must you never do?

What does the green sign above the door indicate?

A red Fire extinguisher sign close to the exit door. Why are the extinguishers placed there and not on the wall in the middle of the corridor?

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There are three sorts of fire extinguishers located in the corridor. The label for the contents of one is not visible – what do you think it contains? (Note the wide exit tube).

Why is there a need for different types of extinguishers? What is each used for and what are the drawbacks of each?

This is a safety shower. There is a green Emergency shower sign on the wall. What do you think the shower is for? How is it used in an emergency? Why is it located here? There is no drain hole – why not, and what happens to the water?

The yellow Cyanide in use sign is in a holder outside the lab door. Why is it here? Can you work out what the “green cross” notice below it is for? Cyanides are very poisonous but may be used regularly by the chemists. They don’t wear any special safety gear, so what do they do to ensure they are safe?

A yellow Compressed gas sign is outside the lab where cylinders of compressed gas are being used. It tells visitors to the lab that there is a potential hazard inside. Compressed gas cylinders are very hazardous if not used carefully.

The large cylinders in use are colour coded - nitrogen (grey) and hydrogen (red). They are heavy and can easily topple over if not secured in a stand. Valves must be put on by a trained person and training must be given to users so that rapid release of gas is avoided. Most cylinders have right handed screw threads on the valve connectors but the hydrogen ones have left handed threads. Why?

On the bench next to the fume cupboard is a bag marked SPILLAGE KIT Absorbent. How would you use it?

On the wall next to the fume cupboard is a plastic bottle with a green top. What is this for (note the trade name on the bottle for a clue)? What do you think it contains? How would you use it to?

There is Handwash basin next to the exit door. What is it used for?

In the lab is an ultra violet light source used to visualise organic compounds on chromatography plates. It is housed inside the box to prevent people being exposed to it accidentally. The yellow sign is Caution U.V. Light. Find out more about chromatography plates in the Synthetic lab tour.

The yellow sign Caution, Strong Magnetic Field is on the door outside the lab containing a nuclear magnetic resonance machine (NMR). The machine creates a large magnetic field which enables chemists to “look” at the chemical environment of certain atoms (normally hydrogen). Find out more about NMR in the Analytical lab tour.

The red sign No entry for persons with heart pacemakers, electronic or metal implants is a warning because strong magnetic fields can disrupt the rhythm of heart pacemakers and other electronic controls. Metal implants can disrupt the magnetic field and generate heat in the magnet which can lead to other hazards.

Keep iron or magnetisable objects away from the strong magnetic field. Iron etc can disrupt the magnetic field and generate heat in the magnet which can lead to other hazards. The NMR machine (grey cylinder marked *400 Ultra Shield*) has two warning signs on it which are difficult to read in the main picture – one states STRONG MAGNETIC FIELDS and the other is a drawing of a horseshoe magnet attracting a spanner. Why do you think there is a small fence round the NMR machine?

The yellow sign on the outside of a cupboard is Highly flammable liquid. The cupboard contains flammable solvent. What do you think the inner part of the flammable solvent cupboard is made of and why is there a lip at the front?

The red containers on the floor are for waste flammable solvents. The label on the side is difficult to see but says SAFETY DISPOSAL CAN. Why are the containers sitting in trays, and why have they got a metal gauze inside the opening? (Hint: find out about Sir Humphrey Davy and the miners’ safety lamp). How do you think the waste flammable solvent is disposed of? How does your school dispose of solvents?

The bin by the sink is for chemically contaminated solids. It is for waste that might be contaminated with chemicals. What chemically contaminated items can be seen in the red bag in the waste bin? What else might go in there? What ways are there of disposing of the contents of the red bag safely?

The blue bin is for waste glass that is contaminated with chemicals. It is placed in special bins marked CONTAMINATED GLASS. What ways are there of disposing of the contents safely?

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The yellow bins are biohazard waste. The yellow plastic bag (bin) marked BIOHAZARD WASTE is not enclosed so that it is obvious that this is special waste. What ways are there of disposing of the contents safely?

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The plastic tub marked DANGER CONTAMINATED SHARPS ONLY is for glass and needles contaminated with Biohazards – note the Biohazard symbol even though the wording is not clear in the picture. It contains blood samples.

Fire Zones and Assembly Area signs are on all main exit routes to show fire escape routes to assembly areas.

All staircases have FIRE ACTION instruction notices with a break-glass alarms.

**Recap**

The signs that you have seen on this tour are various colours and shapes. Why is this?

What types of signs are blue and circular?

What types of signs are green and rectangular?

What types of signs are yellow and triangular?

What types of signs are red and circular?