

Activity 4 – Information sheet

Different coolants are used in reactors – can you find any advantages and disadvantages for using any of them?

Websites to visit:

https://prezi.com/wd10_snae_ik/types-of-coolant-in-nuclear-reactor/

Water

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Molten metal – sodium, mercury, lead, tin

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Molten Salt

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Helium

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Carbon dioxide

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Hydrogen gas

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Information on different parts of the nuclear process

What it is, what it does, which part of the process it is needed in, any interesting facts?

<http://www.world-nuclear.org/information-library/nuclear-fuel-cycle/nuclear-power-reactors/nuclear-power-reactors.aspx>

All require water to operate and they have to build near the sea, a lake or river, or create an artificial lake.

Part of the nuclear process	What is it?	Which part of the process is it needed in?	Any interesting facts?
Uranium	A heavy, silvery-white metal	Uranium is the fuel that is used to make energy. Its atoms are split in the process.	<p>You can find uranium in seawater</p> <p>Uranium was named after the planet Uranus</p> <p>It was formed 6.6 billion years ago</p> <p>It has a melting point of 1,132°C</p> <p>It is one of the heaviest natural elements</p>
Atom	The smallest part of an element that can exist	Nuclear fission splits the atom which creates energy	<p>The size of an atom is about ten-billionth of a meter</p> <p>There are 92 different atoms which occur naturally in elements</p> <p>A human hair is made up of about 1 million carbon atoms.</p>



Part of the nuclear process	What is it?	Which part of the process is it needed in?	Any interesting facts?
Coolant	Usually water, sometimes liquid metal such as sodium	A coolant is used to remove heat from the nuclear reactor core and carry it to the generator	Two types of water can be used – ‘light water’ (normal water) or ‘heavy water’ – with added atoms
Generator	A generator produces electricity	The generator turns the energy which comes from the atom being split into electricity which we can use	Generators are used in all types of power plants The first generator was invented in 1831, using a coil of wire and a magnet

