Russell Lower School D&T MTP

Year 2 Spring term - Making Fire Englines

Session/Unit	Key Learning (Knowledge learnt – Composite)	Key knowledge (Components)	Teaching sequence overview
1	To explore Modern Fire Engines.	To be able to name the main features of a fire engine. To be able to describe the functions of various parts of a fire engine. To be able to label the main features of a fire engine.	Children will explore modern fire engines and their features, looking at what features are common to all vehicles and which are specific to fire engines. There is also the opportunity to look at a 17th century fire engine to compare how they are similar and different to modern fire engines. Without any prompts or visual clues, ask children to draw a picture of a fire engine on a mini whiteboard or piece of scrap paper. After a few minutes, ask children to share their drawings with a partner, discussing the questions on the slides. What do fire engines need to have? How are fire engines different to other vehicles? Children to think, pair, share their ideas. Go through the information and pictures of fire engines on the slides. Ask children to look back at the pictures they drew. Do you need to add anything to your fire engines from what we have learnt?
2	To investigate wheels, axles and chassis.	To know what wheels, axles and chassis are. To understand that there are two different ways of attaching wheels to axles. To experiment with a range of materials and techniques to combine wheels, axles and chassis.	Children will explore how wheels, axles and chassis work together to create the base of a fire engine. They will explore different ways of attaching the chassis to the axles. Show children the picture of a fire engine on the slides. How does the fire engine move? Children to think, pair, share their ideas. Go through the information on the slides explaining that wheels on a vehicle need an axle. Show children the two different ways wheels and axles can be used: either having the wheels firmly fixed to the axle so the axle moves the wheels around, or having the wheels loose on the static axle so that the wheels can turn around. Explain what a chassis is and the part it plays in the two different ways wheels and axles can be used. Tell children that today they will be practising attaching wheels to axles for when they design and make their own fire engines. What different materials do you think we could use for axles? What materials do you think we could use for wheels? What could we use for the

			chassis? Children to think, pair, share their ideas then go through the suggestions on the slides.
3	To be able to investigate ways of creating the body of a fire engine.	To be able to identify different ways of combining materials to create the body of a fire engine. To explore ways of making different parts of a fire engine, such as the ladder. To make decisions about appropriate materials and tools to use for different tasks.	Remind children that in lesson 2 we looked at how to create the basis of a fire engine by joining wheels and axles to a chassis. What else do we need to make a vehicle? Children to discuss ideas. Tell children that today they will be looking at different ways of creating the body of a fire engine. Show children the picture of a fire engine on the slides. What shapes can you see? Explain that today they will be using lots of different materials to practise making the body of a fire engine. Show children various items on the slides, e.g. boxes, card, cardboard discs, etc. How could you use these items to make the body of a fire engine? What else could you use? Discuss ideas as a class. Repeat this for making a ladder and a fire hose for a fire engine. You may wish to model some ways of joining different materials and components together, depending on what you have available, or simply let the children investigate for themselves.
4	To be able to design a fire engine.	To design a fire engine to include wheels, axles, chassis and bodies To be able to describe which materials and tools we will need to make our fire engines. To be able to discuss our designs and say what we think and feel about them.	Children will design their own fire engines, based on the learning they have undertaken so far. They will consider which materials and tools they will need, noting their design ideas using notes and diagrams. Children can design a modern or a 17th century fire engine to specific design criteria. What have we learnt about fire engines so far? What different ways can we make the different parts of a fire engine? Invite children to share their responses as a class. Explain that today children will be designing their own fire engine so that in the next lesson they can make it. Explain it's important to think carefully about your designs so that your finished products work really well. What would your fire engine model need in order to be successful? What should it be able to do? What should it look like? What should it have? Children to think, pair, share their ideas. Go through the design criteria on the slides. Go through the questions on the slides together: How will you decorate your fire engine? What materials and tools will you need to make your fire engine? What kind of axles will you use? Children to discuss ideas as a class.
5	To be able to make a fire engine based on a design	To be able to follow a design to create a fire engine.	Children will follow their designs to create their fire engines, using a range of different materials, tools and techniques. Ask children to get out the designs they did in lesson 4 and give them a few minutes to look through them to remind themselves of what they need to do.

		To use a variety of materials and tools safely and effectively to create a fire engine. To identify ways in which we could improve our products and amend accordingly.	Children to get into pairs. Ask each child to describe to their partner how they will make their fire engine. What will you do first? When will you decorate your fire engine? How will you put the wheels and axles together? How will you attach the axles to the chassis? Tell children that today they will be following their designs to make their fire engines. This means there will be lots going on in the classroom and lots of tools, such as scissors, around. How can we make sure we are working safely and sensibly when we are making our fire engines? Children to think, pair, share their ideas.
6	To be able to evaluate a finished product.	To be able to evaluate a finished product by identifying what we did well. To evaluate a finished product by identifying what we could improve. To be able to identify ways in which we could improve our work in the future?	Children will evaluate their own fire engines, as well as fire engines made by their peers. They will consider what went well, what could be improved upon and what they could do differently if they were to make their fire engines again Ask children to place their finished fire engines on their tables. Give the class some time to walk around the classroom to look at the work other children have done. Which fire engines particularly catch your eye? Why? Do all these fire engines move? Children to discuss ideas. Tell children that today they will be evaluating their work. What does the word 'evaluate' mean and why do you think it is important to evaluate a finished product? Children to discuss ideas as a class then go through the explanation on the slides. Ask children to get into a circle. Look at the questions on the board: What was your favourite part about making your fire engine? What did you find most difficult? For each question, pass around a 'talking object'. As each child takes the object, they give their answer to the question and then pass on to the next child, etc.