

End of Unit Goal: To design and make a purposeful, functional and appealing rocket based on design criteria.

Talk like a Designer Sentence Stems – I made this model because... I like/disliked this because... I think I can make this better by...

Date	Learning Objective	Learning Outcome	Task/activity	Resources	Key Vocabulary
Lesson 1	I can think about how a rocket is constructed.	To explore and evaluate a range of existing products. To generate, develop, model and communicate their ideas about rockets through talking.	<u>Main Teaching</u> Ask children to draw what they think a space rocket looks like on whiteboards. What do you think a space rocket looks like? Investigate similarities and differences- do we all have a set idea of what a space rocket looks like? Look at photo's of famous rockets- What shape are they? What design features do they have? Why do they need to be like this? Make connection between design and purpose. What do you think an astronaut would say about rockets- why do they need them? How do they use them? Explain that many rockets are only designed to be used once, which makes them disposable and very expensive! <u>Differentiated Activities/Challenges</u> Children to write a list of things they think a rocket needs e.g nose, windows, engine etc. T to support the children where needed. Children to have photographs of rockets to support them. <u>Plenary</u> Bring the children back together and share their ideas of	Pictures of rockets	Cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder

			what a rocket needs.		
Lesson 2	I can work as a group to design and make a rocket.	To design a purposeful, functional and appealing rocket. To generate, develop, model and communicate their ideas through talking. To select from and use a range of materials and components to make a rocket.	<u>Main Teaching</u> Explain that today we have a challenge – split the class into groups of 5. Explain that we have three different materials to use to build rockets today – give each group one type of material. -Duplo -Art Straws -Unifix cubes <u>Differentiated Activities/Challenges</u> Challenge through questioning – how will you make the nose of the rocket? What else do you need? Remind the children about the importance of teamwork. T to take photos for book evidence. <u>Plenary</u> Children to look at other teams' rockets. What do you like about it? What could you add to it? Children to complete a questionnaire about their rocket building.	Duplo, Art Straws, Unifix cubes, camera, questionnaire.	Cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder

Lesson 3	I can follow instructions to make a cardboard rocket.	To select from and use a range of materials and components to make a rocket. To evaluate their rocket against the design criteria.	<u>Main Teaching</u> Explain that today we are going to use different materials to make a rocket. Explain that instead of cardboard tubes we are going to roll some card instead – T to model doing this. T to model making the rocket following each step on the IWB. <u>Differentiated Activities/Challenges</u> Children to go to tables and follow the instructions to make the rocket. HA – twinkl instructions MA/LA – widget instructions. T to take photos of rocket making and finished product. <u>Plenary</u> Bring the children back together – share children's thoughts. What did you find tricky? What did you do well?	Twinkl rocket instructions, Silver foil, Tissue paper, Brightly coloured card, Brightly coloured paint, PVA glue, Scissors, Sticky tape	Cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder

Lesson 4	I can think of resources I might need to make a rocket.	To design a purposeful, functional and appealing rocket. To select from and use a wide range of materials to make a rocket.	<u>Main Teaching</u> Explain to the children that over the next few weeks you are going to design and make your own rocket. You will bring the resources into school that you want to use. Show the children the video on how you could make a rocket. https://www.youtube.com/watch?v=ZPdbS_JNoqY Show the children the picture collection of homemade rockets – which materials have been used? What do you like about the different rockets? Come up with a list of potential resources we could use. Show pictures of homemade rockets. <u>Differentiated Activities/Challenges</u> Children to come up with lists of resources they could use to build rockets- encourage them to be realistic. Children to write their list in their books.	Youtube, photos of homemade rockets.	Cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder
Lesson 5	I can design and label a structurally sound rocket.	To design a purposeful, functional and appealing rocket. To select from and use a wide range of materials to make a rocket.	<u>Main Teaching</u> Send letter to parents explaining the project – children to bring junk they would like to use to make their rocket e.g. cardboard tubes, milk bottle lids etc. T to model designing a rocket using the Twinkl design sheet – model labelling it. <u>Differentiated Activities/Challenges</u> Children to complete the design sheet and label it. Have photos of rockets to support children's designs. T to support LA with labelling. <u>Plenary</u>	Twinkl design sheet, rocket pictures.	Cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle,

			Children to share their design with a partner.		triangle, square, rectangle, cuboid, cube, cylinder
Lesson 6	I can make and evaluate my design	To select from and use a wide range of materials to make a rocket. To select from and use a range of tools and equipment to make a rocket. To build a rocket exploring how it can be made stronger, stiffer and more stable.	<u>Differentiated Activities/Challenges</u> Children to have a little time to look over their designs, T to support children in gathering the materials they need to build their rocket. Children to build their rockets. T to support the children where needed – T to encourage the children to look back at their designs, to ensure they are following it. T to take photo of making process and end product. <u>Plenary</u> Children to complete the Widget DT self-assessment sheet.	Rocket designs, reclaimed materials, paint, glue,	Cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder