### SWAPNA HADDOW

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## TORN APART LESSON PLAN: YEAR FIVE

#### NATIONAL CURRICULUM LESSON OBJECTIVES

**Design and Technology:** through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

**Design:** use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate ideas through discussion and annotated sketches.

**Make:** select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

**Evaluate:** evaluate ideas and products against own design criteria and consider the views of others to improve work.

#### **OUTCOMES**

Pupils will design and make a bag or container, strong enough to hold a 400g weight (2 mangoes).

#### **CURRICULUM LINKS**

**English:** Vocabulary enrichment: use research/dictionary to find out the meanings of the underlined words and phrases throughout this pack.

**Maths:** calculate the weight the container can sustain. Scale it up, as if to hold more mangoes. Conversions, from imperial weight to metric equivalent.

History: research on traditional Indian clothes.

Computing: online research.

#### **RESOURCES**

Resource Sheet 1: Research Traditional Indian Clothing

Resource Sheet 2: Product Design and Manufacture

Resource Sheet 3: Evaluate and Improve

Resource Sheet 4: Plenary Questions

2 mangoes or 400g weight, paper, scissors (including fabric scissors), rags (an old sheet or t-shirts would be perfect), wool, glue and string etc.



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#### **LEAD IN**

Read: page 67.

"I must have dozed off against the trunk of the tree because the slap of Amar splashing through muddy puddles startled me awake. He was hurrying towards me with a dozen mangoes cradled in the front of his kurta."

What is a kurta? Here is an opportunity to research items of clothing mentioned in Torn Apart.

(See Resource Sheet 1: Research Traditional Indian Clothing.)

This could be enlarged and completed one per table, one between two or an individual piece of work.

We assume that Amar had picked the mangoes from a tree. The mangoes must have been heavy. What would have happened if Amar had needed to run due to the violence or the rain? The mangoes were precariously held in the kurta. How did he manage to harvest the mangoes without a container? This task would have been made easier for Amar with a suitable carrier for the mangoes.

#### TASK

Inform pupils that they are going to make a mango carrier. Hand out *Resource Sheet 2: Product Design and Manufacture*.

The carrier will be suitable for transporting two mangoes. Think about the types of materials which may have been available to Amar and Ibrahim. To be helpful to Amar, the carrier should have a strap or handle. That way, if he needed to run, it would be easier to keep hold of the mangoes.

Watch YouTube clips, or do some other online research, to gather some ideas for the type of containers pupils would like to make. Alternatively, they may be able to think of their own designs.

Ensure pupils are aware what 400g in weight feels like. Complete the design sheet. Tell pupils to bear in mind that ideas and expectations may change as they make the carrier. They shouldn't worry about this as all design starts with an experiment or idea!

Decide whether pupils are working individually or in groups and gather resources needed. Get making!

Ensure pupils have a secure understanding of 'evaluation'. Focus on how the carriers turned out and whether they are fit for purpose. Just like real designers would, weigh up the good and bad aspects. Celebrate the features which work well, but suggest how others could they be improved. Hand out *Resource Sheet 3: Evaluate and Improve.* 

Complete the sheet as a class.



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#### **PLENARY**

Choose four/five groups or individuals to show their finished products. Each should be timed for one minute, to explain the features of their designs and how they adhered to the design brief.

Use Resource Sheet 4: Plenary Questions.

Cut up plenary questions and give one to each child. (These questions will serve to gauge pupils' understanding of different aspects of the lesson and the design process.) All children to answer their question with a partner, so each pair will cover two questions. If you have time, choose several children to share their answers with the class.

#### **EXTENSION**

In *Torn Apart*, Amar was carrying a dozen mangoes. How many is this? Think about modifications which could be made to the carriers to enable them to hold more weight.

Could pupils carry out the same task, sticking to a budget (with all resources priced and a budget stipulated)?



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### **RESOURCE SHEET 1: RESEARCH TRADITIONAL INDIAN CLOTHING**

Carry out some research on clothing traditionally worn in India.

ITEM OF CLOTHING	DRAW IT	FACTS
KURTA P67		
DUPATTA P11		
TOPI P30		
SALWAR KAMEEZ P55		S WAP NA HADDO W
	#TornApart	TORNAPART THE PARTITION OF INDIA

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### **RESOURCE SHEET 2: PRODUCT DESIGN AND MANUFACTURE**

**Design Brief** 

The average weight of a mango is 200g. Design a container which will carry 400g i.e. 2 mangoes. This is your brief:

1. The container must hold 400g in weight.

2. It must have a carry handle or strap.

**3.** It must be made from materials which may have been available to Amar and Ibrahim.

After watching some clips and doing some research, decide what type of container you'd like to make

CONTAINER SHAPE. WHY HAVE YOU CHOSEN THIS TYPE OF CONTAINER?	NAME AND DRAW A FEATURE YOU LIKE.
MATERIALS AND EQUIPMENT	WHY HAVE YOU CHOSEN THESE MATERIALS?
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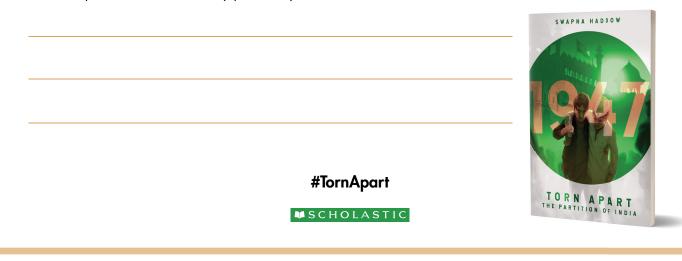
### **RESOURCE SHEET 3: EVALUATE AND IMPROVE**

Draw an annotated diagram of your mango carrier:

Explain why this is a good product (you may want to mention how you followed the design brief).

Just like a real designer would, complete the sentences to improve your product... I could improve the strength of my product by:

I could improve the aesthetic of my product by:



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### **RESOURCE SHEET 4: PLENARY QUESTIONS**

Photocopy this page twice. Cut up the questions and give out. Pupils should answer their question and then discuss their neighbour's question too.

WHAT FEATURE ARE YOU MOST PLEASED WITH?	GIVE A DEFINITION OF 'EVALUATION'	WHAT IS A DESIGN BRIEF?	WHAT WENT WELL FOR *NAME*?
WHAT IS YOUR TOP FEATURE, PRODUCED BY ANOTHER STUDENT?	AS A DESIGNER, WHY IS IT IMPORTANT TO STICK TO A DESIGN BRIEF?	WHAT FEATURE ARE YOU MOST PLEASED WITH?	WHY IS EVALUATION IMPORTANT?
IF YOU COULD HAVE CHOSEN ANY MATERIAL, WHAT WOULD IT BE AND WHY?	WHAT WENT WELL FOR *NAME*?	WHAT FEATURE COULD YOU IMPROVE ON?	AS FAR AS YOU CAN SEE, WHICH CARRIERS ARE MOST EFFECTIVE?
WHAT FEATURE COULD YOU IMPROVE ON?	IF YOU COULD HAVE CHOSEN ANY MATERIAL, WHAT WOULD IT BE AND WHY?	CAN YOU SEE ANY OTHER USES FOR YOUR CARRIER IN THE STORY?	GIVE A DEFINITION OF 'EVALUATION'

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## TORN APART LESSON PLAN: YEAR SIX

#### NATIONAL CURRICULUM LESSON OBJECTIVES

**Design and Technology:** through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

**Design:** use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.

**Make:** select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.

**Evaluate:** evaluate ideas and products against own design criteria and consider the views of others to improve work.

Technical Knowledge: apply understanding of how to strengthen, stiffen and reinforce more complex structures.

#### **OUTCOMES**

Pupils will research design techniques and methods to make a pair of paper shoes/slippers.

#### **CURRICULUM LINKS**

**History:** develop an understanding of what life was like during the partition of India. Understand that living conditions and materials available were different in 1947.

**Geography:** location of India on world map and the places involved in the partition i.e. Pakistan and Kashmir. **Maths:** measuring (for making) and ratio (for scaling up).

#### **TEACHER REFERENCE**

Explain that Britain used to have a large empire and ensure a secure a definition for 'Partition'. Then read the prologue to the class.

#### **RESOURCES**

Resource Sheet 1: Product and Audience. Resource Sheet 2: Research, Design Criteria and Making Process. Resource Sheet 3: Evaluation and Development of Prototype. Paper, scissors, glue, cardboard, rulers and pencils.



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## TORN APART LESSON PLAN: YEAR SIX

#### **LEAD IN**

Read: page 112.

"Give me your shoes if you think they're worthless." "Oh, okay," I said, confused, pulling off my shoes, not quite sure what I was now agreeing to. He took off his own broken shoes, pulled on mine and then jumped up, tapping his feet on the floor. "Can I keep them?" he asked. "Errr," I started, looking at my own bare feet. "I don't actually have a spare pair on me."

Ibrahim does give his shoes to Amar and later on in the story, we meet a woman walking, we assume, without any shoes...

"A woman carried two babies, her feet swollen and cut, her babies' wailing the only sound alongside the slap of feet in dirt as we all trudged along the street."

Discuss why it might be that not everyone had shoes.

#### TASK

Hand out Resource Sheet 1: Product and Audience. As the discussion continues ask students to fill in the sheets.

Tell pupils they are going to make a pair of prototype shoes using research, design and making skills. Talk about the necessity of wearing shoes, and fill in the sections on the sheet. Discuss with the pupils, the type of materials which may have been available to make shoes on the streets of India in 1947. For example, plastic/ rubber wouldn't have been widely available. Discuss the idea of using recycled materials and the necessity of having to do this in 1940s India and in the UK today. Talk about 'design considerations', i.e. simplicity for the streets of India, lack of availability of materials etc.

Hand out Resource Sheet 2: Research, Design Criteria and Making Process.

Explain that pupils are going to decide on a design, in order to make a pair of paper or cardboard shoes. This would obviously represent a prototype, as a first step, which manufacturers do before producing the 'real thing'. Discuss the importance of designing a prototype prior to producing goods for sale on a large scale. Watch relevant video clips and online instructions that show how to make paper shoes and origami slippers.

Make a list of equipment and materials needed and gather. Have a go at working alongside a video clip to make the shoes. Pupils may decide, at this point, to go it alone.

Give the pupils the definition of an 'iterative process'. Discuss the importance of engaging in an iterative process. Make the shoes.

Hand out Resource Sheet 3: Evaluation and Development of Prototype.

Draw the finished shoes or add a photograph of them. Discuss what went well in the research, design and making process and fill in the worksheet.

Ensure that pupils know that this design can be used for making actual shoes. What would we have to change to ensure they would be a good product and fit for purpose?



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## TORN APART LESSON PLAN: YEAR SIX

#### PLENARY

If pupils have understood this 'design and make' process, they should be able to apply it to another completely different product. You could ask them to do this on sticky notes, using one sentence or bullet points, under the headings: PRODUCT AND AUDIENCE; RESEARCH, DESIGN CRITERIA AND MAKING PROCESS and EVALUATION AND DEVELOPMENT OF PROTOTYPE. Examples could be: devising a new smoothie flavour or inventing a kitchen gadget. This activity will assess understanding of the vocabulary and processes.

#### **EXTENSION**

- 1. Work out how to scale the design up or down to fit different sized feet.
- **2.** Apply this 'design and make' process to another product entirely. Have pupils independently complete another design challenge.
- 3. Think about ways the prototype could be made waterproof.

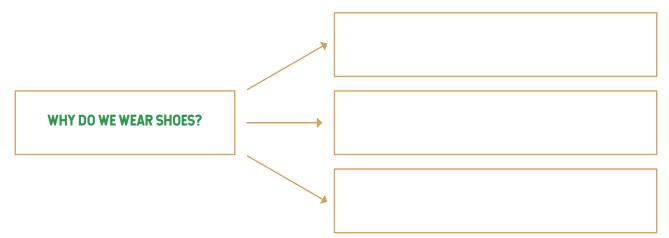


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### **RESOURCE SHEET 1: PRODUCT AND AUDIENCE**



Design considerations: fill in the table using single words, sentences or diagrams.

	INDIA 1947	PRESENT DAY UK
MATERIALS AVAILABLE		(Think about what your own shoes are made from.)
EXAMPLES OF RECYCLED MATERIALS		
WHY IS IT USEFUL TO RECYCLE MATERIALS		
FOR DESIGNING AND		
MAKING?		

How could this simple shoe design have helped Amar during the 1947 partition of India?

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### RESOURCE SHEET 2: RESEARCH, DESIGN CRITERIA AND PRODUCTION PROCESS

Research a design or devise your own method for making a pair of shoes or slippers.

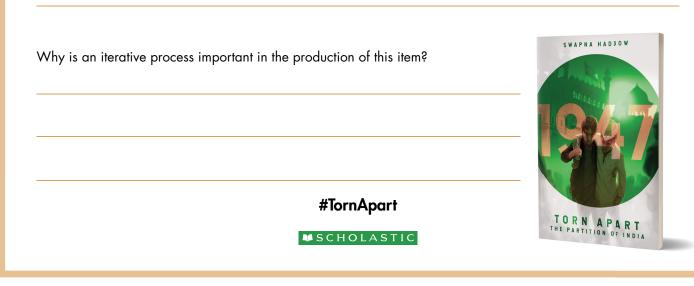
Explain how you are going to do this, with labelled diagrams.

#### Definition: **PROTOTYPE**

#### Materials and equipment:

- •
- •
- •
- •
- •
- •

What is an iterative process?



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### **RESOURCE SHEET 3: EVALUATION AND DEVELOPMENT OF PROTOTYPE**

Draw a picture or stick in a photograph of the shoes:



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### **RESOURCE SHEET 3: EVALUATION AND DEVELOPMENT OF PROTOTYPE**

Did the shoes turn out like you expected them to?

Did you run into any problems whilst making the prototype?

Are there any considerations which were flagged up by the production of a prototype? (Think about comfort, materials, strength, fit for purpose, etc.)

What would you do better next time?

How could the shoes be reinforced? (Demonstrate this.)



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