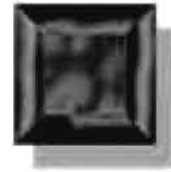


COUNTING ON THE PAST

INTEGRATED NUMERACY RESOURCES



PLAITS AND HATS

AT KEY STAGE 2

Arts Libraries & Museums

Luton Culture

PLAITS AND HATS AT KS2

AT THE MUSEUM

Section 1 *Look at this picture of straw plait*



- Describe the pattern you can see ?

- How many right angles are there in this pattern ?
- What other words can you use to describe this repeating pattern ?

Find another type of straw plait in the displays

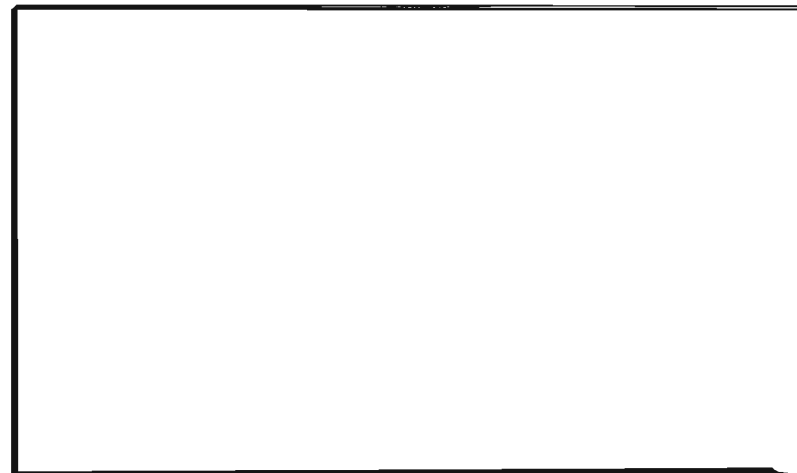
A 3 end plait needed 3 straws to plait it.

- How many straws are needed to plait your piece ?
- List the other numbers of ends you can find. ?

- Do you notice anything about these numbers ?

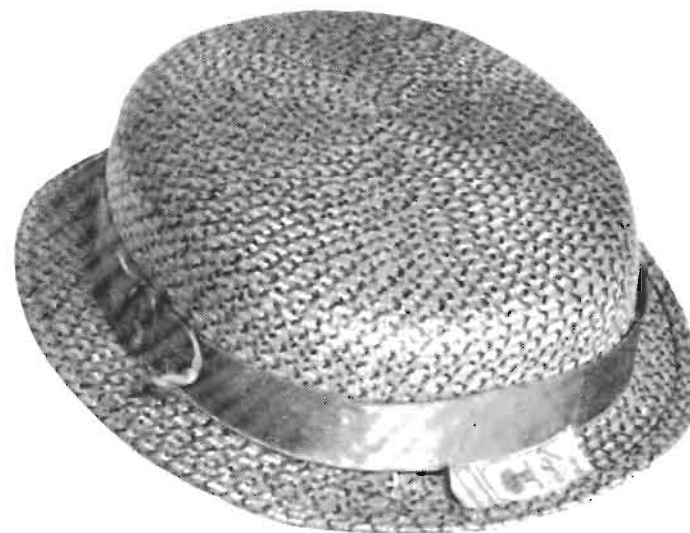
Section 2

Find a spiral of stitched straw...then sketch it in the box



- What part of a hat would it come from?

Mark it on this hat

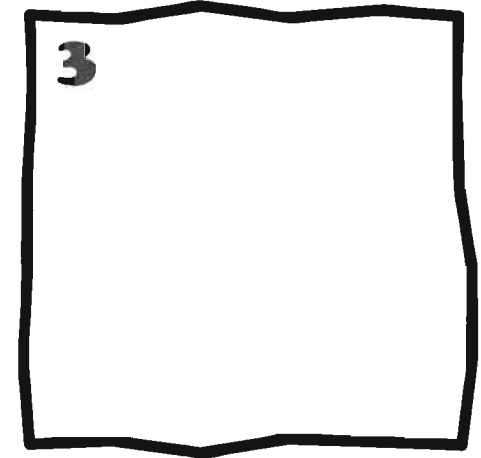
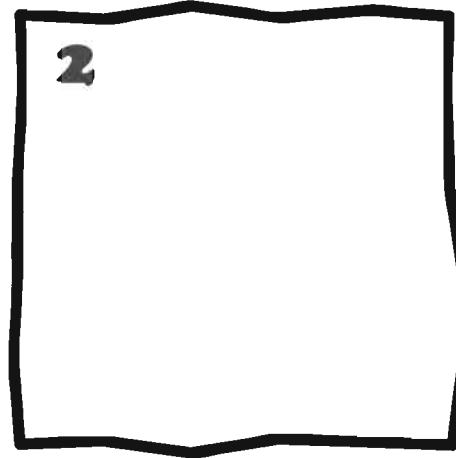
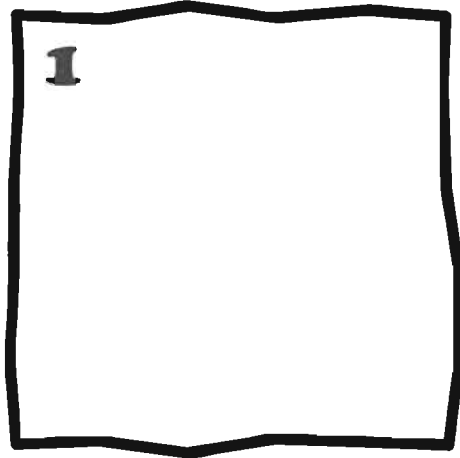


PLAITS AND HATS AT KS2

AT THE MUSEUM

Look for the straw splitters

Draw three different designs of splitter here

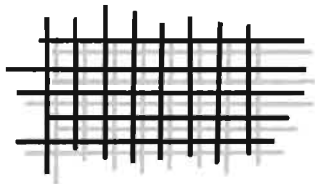


- What is the same about these splitters above?

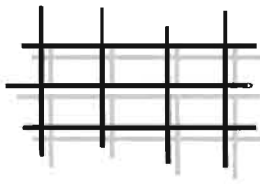
- What is different about these splitters above?

Straws were sorted by their circumference using a machine like a sieve.

A



B



Which of these sieves would sort the finest straw?

- If they wanted thicker straw would the holes in the sieve need to be bigger or smaller?

Find a plait winder that looks like this.

Draw the shapes you see in it?



- Can you find the same shapes in any other objects?

PLAITS AND HATS AT KS2 AT THE MUSEUM

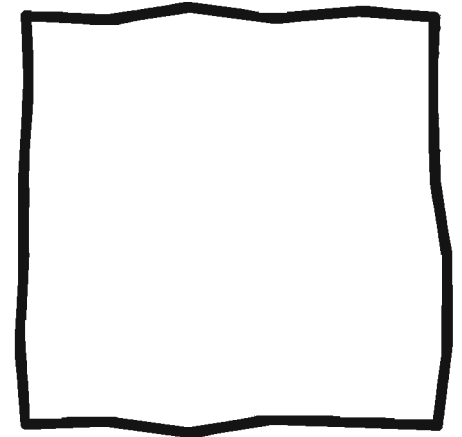
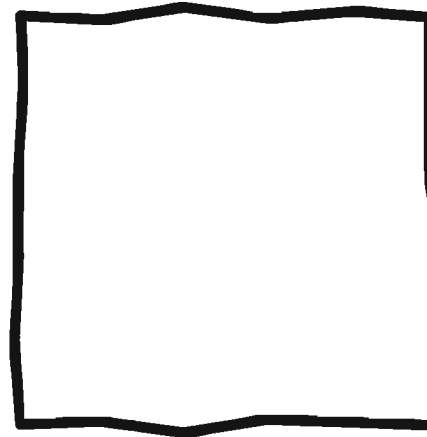
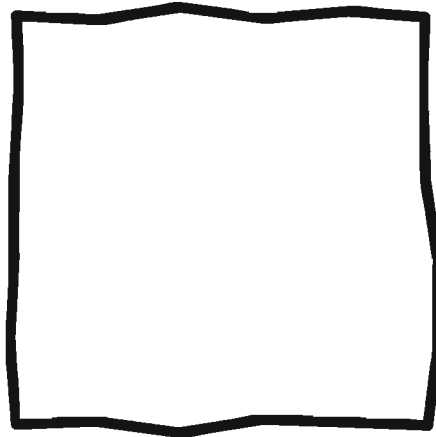
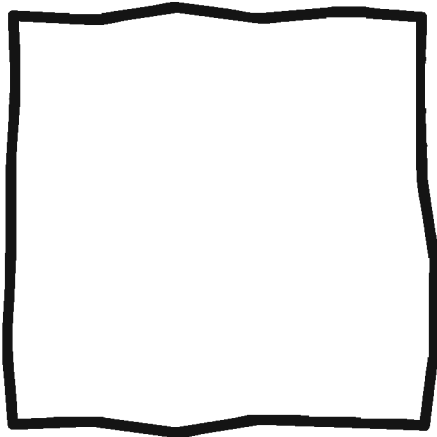
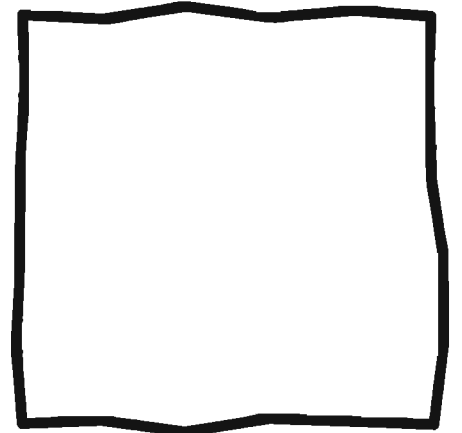
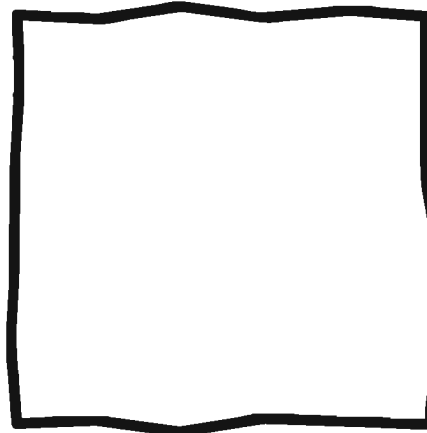
Section 3

Look at the hats in the gallery.

- How many hats can you see?
- How many of these are men's hats?
- How many are women's hats?
- How many different shapes of hat can you find?



Draw them in the boxes and describe them underneath.



PLAITS AND HATS AT KS2

AT THE MUSEUM

Section 4

*Find a hat block
& sketch it here.*



*Draw a diagram of a hat
block for your favourite hat.*

*Describe how you worked
out what shape it would be.*

A simple line drawing of a rounded rectangular box, intended for a student to draw a diagram of a hat block.A large, empty rectangular box with a thick black border, intended for a student to draw a diagram of a hat block.

*Draw a picture of the type of hat
you think this hat block would produce.*

A large, empty rectangular box with a thick black border, intended for a student to draw a picture of a hat based on the provided hat block.

Look at this photograph of a hat box.

*Draw the shape of the hat
you think would fit into it.*

A simple line drawing of a square box, intended for a student to draw the shape of a hat that would fit into the provided hat box.A large, empty rectangular box with a thick black border, intended for a student to draw a picture of a hat based on the provided hat box.

Choose a hat you like and draw a box to fit it here.

PLAITS AND HATS AT KS2

BACK AT SCHOOL

Section 1

Record your answers in your book

Look at a modern hat

- Describe how it is made.
- How many pieces are used?
- What shape are the pieces?
- How many of each shape are used?

Compare your answers with some friends.

- Which shape is used most?
- Try and make a pattern for your hat.

All new hats would be packed into boxes.

- What shape would the box need to be to fit your hat?
- How tall you it need to be?
- How wide would it need to be?
- How deep would it need to be?
- Can you make a box for your hat?



Section 2

Measure round the top of your head just above your eyebrows.

- What did you used to do this?
- My head is cm

Measure round the inside of your hat

- My hat is cm
- Which is bigger your head or your hat?
- What is the difference between the 2 measurements?

Size	Circumference				
6	49 cm	6 3/4	55 cm	7 1/2	61 cm
6 1/8	50 cm	6 7/8	56 cm	7 5/8	62 cm
6 1/4	51 cm	7	57 cm	7 3/4	63 cm
6 3/8	52 cm	7 1/8	58 cm	7 7/8	64 cm
6 1/2	53 cm	7 1/4	59 cm		
6 5/8	54 cm	7 3/8	60 cm		

Look at this table of hat sizes

- What is your hat size?
- What size is your hat?
- Is your hat the right size for your head ?

Section 3

Plaiting

Try plaiting with art straws - use the thinner sort for best results

First flatten your art straws. Use these directions and try a 3-end plait

Take two straws, hold one horizontally, take the second and place it diagonally in front of the horizontal straw. Fold the lower end of the second straw up, behind the horizontal straw, **figure 1**.

Take the outside right-hand straw and fold into the centre to lay beside the left-hand straw, **figure 2**.

Take the outside left-hand straw and fold into the centre to lay beside the right-hand straw, **figure 3**.

Continue the plait by folding the right-hand straw into the centre working left and right alternately, **figure 4**.

The straw to be joined must be in the centre of the three and the end pointing to the right. Lay the new straw on top of the short end, **figure 5**.

Continue the plait by making the movement on the right, taking care to leave the old end behind, **figure 6**.

Continue the plait joining as necessary, **figure 7**.

Figure 1



Figure 3

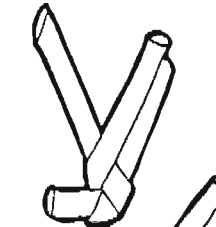


Figure 5

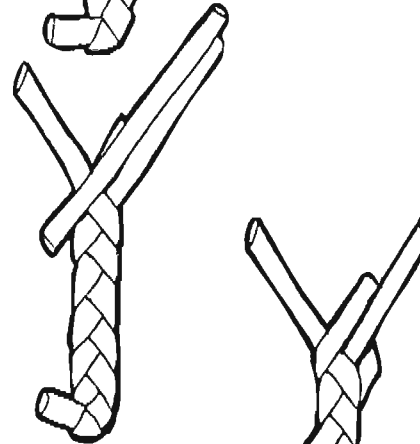


Figure 7

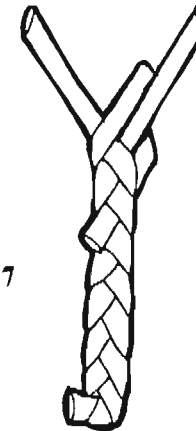


Figure 2

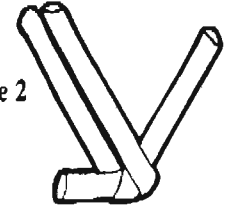


Figure 4

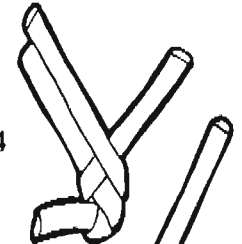


Figure 6



PLAITS AND HATS AT KS2

BACK AT SCHOOL

Plaiting

If you can do a 3-end plait - now try a 5-end plait following these instructions

Take two straws, hold one horizontally, take the second and place it diagonally in front of the horizontal straw. Fold the lower end of the second straw up, behind the horizontal straw, **figure 1**.

Take the outside right-hand straw and fold across to lay to the right of the centre straw, **figure 2**

Take the outside left-hand straw and fold this behind the second straw and over the third straw on the left, **figure 3**

Inset the fifth end by laying it over the first straw and under the second on the left to lay to the inside of the two straws on the right, **figure 4**

Fold the outside right-hand straw over the second straw and under the third straw of the right-hand group, **figure 5**

Fold the outside left-hand straw over the second straw and under the third on the left hand group, **figure 6**

continue working the alternate sides using the sequence over one under one

To Join: The straw to be joined must be in the centre of the group of three on the right-hand side. Lay the new straw on top of the short end, **figure 7**

continue the plait by taking the outside straw over the new straw and old end and under the remaining right straw on the right, **figure 8**.

Figure 1

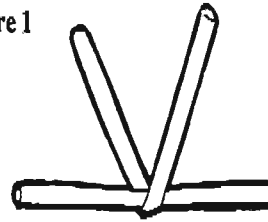


Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7

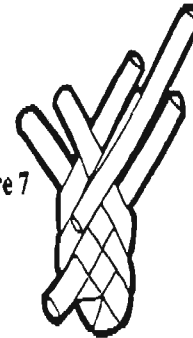
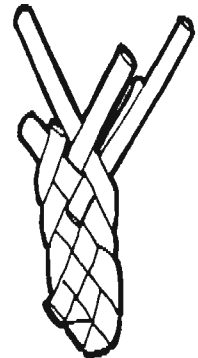


Figure 8



PLAITS AND HATS AT KS2

BACK AT SCHOOL



Look at your plait.

3-end

5-end

How many times do the straws cross in 5cm of plait?		
Measure the angles at which the straws are bent at the sides of the plait		
What type of angle is this? How many times are the straws bent in 5cm of plait?		
Are they bent more or less times than they cross?		
Measure the length of the shortest straw before you start plaiting in cms		
How long is the plait before you need to add new straws?		
Is the plait longer or shorter than the straw?		
Why do you think this is?		

- What differences are there between the 3-end and 5-end plait ?
- Work out a way to follow the path of just one straw through the plait
- How many times does one straw change direction in a 5cm length of plait ?
- Does it bend more times in the 3-end or the 5-end ?

PLAITS AND HATS AT KS2

BACK AT SCHOOL



Section 5

Look at this evidence about the plait schools Sarah Ann Meagher was 7 and lived in Berkhamstead:

"I go to Mrs Scott's plait school three times a day, from 8.30 to 12, from 1 to 4 and from 5 to 8pm. Mother sets me five yards to do in each school, one yard at dinner at one at teatime. Often I have to get up in the morning at 7 or 6.30 and begin work, because I have so much to do. If I do five mother says I am a good girl; she doesn't hit me, the mistress does sometimes."

1867 Children's Employment Commission Report

Record your answers in your book

- How many hours per day did Sarah Ann Meager work?
- How many yards of straw plait did her mother expect her to produce each day?
- If she only worked five days per week, how many hours would she have worked?
- How many hours per week do you spend in school?
- Did Sarah Ann work longer hours than you do?
- How many yards of plait would she have produced?

Look these statistics from the 1862 Children's employment Commission.

Female Workers Occupations	All Ages	Under 20 years			20 years & Up
Straw plait manufacture	27,739	10,271			17,468
Straw hat & bonnet maker	16,489	4,642			11,847
Total Females	44,228	14,913			29,315
Girls under 20 Occupations	Under 5	5+	10+	15+	20
Straw plait manufacture	-	1,594	4,257	4,420	-
Straw hat & bonnet maker	-	103	1,267	3,272	-
Total Females	-	1,697	5,524	7,692	-
Male Workers Occupations	All Ages	Under 20 years			20 years & Up
Straw plait manufacture	2,128	1,561			567
Straw hat & bonnet maker	1,687	277			1,410
Total Males	3,815	1,838			1,977
Boys under 20 Occupations	Under 5	5+	10+	15+	20
Straw plait manufacture	-	667	673	221	-
Straw hat & bonnet maker	-	4	64	209	-
Total Males	-	671	737	430	-

- How many boys aged 5+ were involved in straw plait manufacture?
- How many girls aged 15+ were straw hat and bonnet makers?
- How many people in total were involved as straw hat and bonnet makers?
- Write down three more facts that you can read from this information.