

ANIMAL SHELTERS! (GRADE 4)

Preparation:

Leading Question:	How can we design a space to care for stray animals in our community?
Description:	Learners will design and build models of animal shelters to support stray animals in their community. The project begins with identifying the types of stray animals that need help. Learners will then divide a given plot of land into smaller sections using simple fractions, such as one-half, one-fourth, and three-fourths, and allocate space for different animals. Each section will be planned and detailed based on the specific needs of the animals it serves, with a focus on features that can enhance their well-being. Finally, learners will construct models to bring their shelter designs to life. This project will help learners understand the concepts covered in Chapter 6 - Fractions on Pg. 35 of the SCERT Textbook. A detailed mapping showing the topics covered is included at the bottom of the document. Do upload pictures of the models that students make to the project submission form!
Resources required:	Chart paper, paper, pencil, colours <i>Optional:</i> Cardboard, copies of Appendix 1 and Appendix 2 (1 per group)

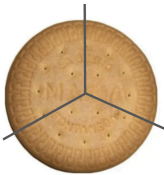
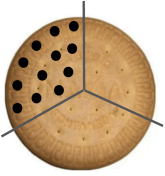
Day 1 -

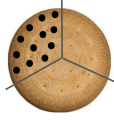
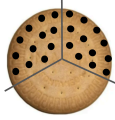
Learners will begin planning their animal shelters and explore fractions as a way to divide the shelter plot into different areas.

Time	Activity and Description
10 minutes	What Is This Project About?: (Group Work) Divide learners into groups. Inform them that they will work in the same groups throughout the project. If available, distribute copies of Appendix 1 to each group. Teacher says: - <i>Have you seen any stray animals in our community? Which ones?</i> Take responses, such as goats, pigs, or cows. - <i>In your groups, discuss any problems that they might face.</i> Allow learners a minute to discuss and then take Aben saw that some pigs and goats in her village looked tired and hungry. She wanted to help them. First, Aben helped the pigs. She collected leftover rice and vegetable peels and fed them. The pigs grunted happily and wagged their tails. Then, she helped the goats. She gave them fresh leaves and cleaned their resting place. The goats bleated softly and followed her around. Soon, other people in the village joined Aben. They built a small shed to protect the animals from the rain. That month, during Metümnyo, families gathered to clean their homes, wear new clothes, and share meals. Aben shared her story, and many children promised to care for animals too. Aben showed everyone how to care with kindness. People saw that when we help, life gets better for all. 

	responses, such as not having enough food or care when they are sick. - <i>Let us start this project with a story about a girl who decides to take care of stray animals!</i> Read the story aloud to the learners. - If copies of Appendix 1 are available, learners can follow along as you read. - Alternatively, they can first read the story in their groups, and then the teacher can summarise it for the whole class. Then, groups will discuss these questions: - Why did Aben want to help the stray animals? - What did she do to help them? - How did her community members help her take care of the stray animals? - What can you do to help the stray animals around our school? Allow learners 3-4 minutes to discuss the answers. After taking responses, the teacher says: - <i>Just like in Aben's village, there are many stray animals in our community that need shelter and care to live safe and happy lives.</i> - <i>In this project, you will design a shelter for stray animals in our neighbourhood, and create a model of it! On the last day, you will present the model to teachers and people from the community, explaining why our community needs an animal shelter, how you designed it, and what you included in it.</i> - <i>Just like in the previous project, you will work together to explore and answer a big question or the leading question. The leading question for this project is: How can we design a space to care for stray animals in our community?</i>
5 minutes	<u>How Do We Begin Planning Our Shelters?: (Group Work)</u> Teacher says: - <i>Let us think about which animals will benefit from our shelters and how we will plan a shelter for them.</i> - <i>In your groups, discuss:</i> - <i>Which stray animals in your community need your shelter the most?</i> - <i>How will you make sure that these animals live happily and safely?</i> Write these questions on the board so that groups can refer to them as they discuss. Allow them 2-3 minutes to discuss and list. After taking some responses, share that each shelter must include the following: - At least 2 types of animals from your community that need help - Separate enclosures for each type of animal - At least 2 features in each enclosure to make sure each type of animal can live happily and safely (e.g., space to rest, play, stay clean, etc.) - A store room to keep food for the animals - Path to travel between different areas Write the shelter criteria on a piece of paper and stick it on the classroom wall for groups to refer to throughout the project.

15 minutes	How Do We Divide A Whole?: (Group Work): Give each group a 6 × 6 grid to plan their animal shelter. You can do this in two ways: - If copies of Appendix 2 are available, distribute one to each group. - If not, draw the 6 × 6 grid on the board. Ask each group to carefully copy it onto a blank sheet of paper using a ruler and pencil, making sure all squares are the same size. Teacher says: - <i>This grid is the plot of land where you will design your animal shelter. Each square is as big as your classroom!</i> - <i>How should we start designing the shelter on this land?</i> (Give groups a minute to discuss, then take a few responses.) - <i>The first step is to divide the whole land into different parts, for example, areas for animals, a store room, and a medical room. These parts of a whole are called fractions.</i> - <i>Let us first find out what fractions are! In the next class, we will use fractions to divide our piece of land into different spaces.</i> <table border="1" data-bbox="370 997 1474 1896"> <tr> <td data-bbox="370 997 500 1703">I DO</td><td data-bbox="508 997 1474 1703"> Draw a round biscuit on the board. Then, ask learners to draw and show how they would divide 1 biscuit equally between 2 friends. Allow 1-2 learners to show their work to the class. Once done, explain that: - The biscuit shows the whole. - To share it equally between two friends, we divide it into two equal parts. Each part is a fraction of a biscuit. - In this case, the biscuit is divided into 2 equal parts, which makes the whole, and each person gets 1 part. - In math, a fraction is written as $\frac{\text{part}}{\text{whole}}$. So, the fraction of the biscuit that each person will get is $\frac{1}{2}$. - The number on top, which shows the part, is called the numerator. In this case, the numerator = 1. - The number at the bottom, which shows the whole, is called the denominator. In this case, the denominator = 2. </td></tr> <tr> <td data-bbox="370 1713 500 1896">WE DO</td><td data-bbox="508 1713 1474 1896"> Ask groups to draw and show the following. For each, they should write the fraction of the biscuit that each person gets, and the numerator and the denominator in each fraction: - Divide 1 biscuit equally among 3 friends. - Divide 1 biscuit equally among 4 friends. </td></tr> </table>	I DO	Draw a round biscuit on the board. Then, ask learners to draw and show how they would divide 1 biscuit equally between 2 friends. Allow 1-2 learners to show their work to the class. Once done, explain that: - The biscuit shows the whole. - To share it equally between two friends, we divide it into two equal parts. Each part is a fraction of a biscuit. - In this case, the biscuit is divided into 2 equal parts, which makes the whole, and each person gets 1 part. - In math, a fraction is written as $\frac{\text{part}}{\text{whole}}$. So, the fraction of the biscuit that each person will get is $\frac{1}{2}$. - The number on top, which shows the part, is called the numerator. In this case, the numerator = 1. - The number at the bottom, which shows the whole, is called the denominator. In this case, the denominator = 2.	WE DO	Ask groups to draw and show the following. For each, they should write the fraction of the biscuit that each person gets, and the numerator and the denominator in each fraction: - Divide 1 biscuit equally among 3 friends. - Divide 1 biscuit equally among 4 friends.
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		Allow groups 2-3 minutes to do this, and then take responses. Once done, using the board, explain that: To divide 1 biscuit equally among 3 friends: - We need to break it into 3 equal parts, so the whole = 3. - Each person gets 1 part, so part = 1. - So, the fraction = $\frac{\text{part}}{\text{whole}} = \frac{1}{3}$ - Numerator = 1, denominator = 3  To divide 1 biscuit equally among 4 friends: - We need to break it into 4 equal parts, so the whole = 4. - Each person gets 1 part, so part = 1. - So, the fraction = $\frac{\text{part}}{\text{whole}} = \frac{1}{4}$ - Numerator = 1, denominator = 4 
	YOU DO	Read this case to the groups: - Aben and Kugaho want to share one biscuit. - Aben broke it into 3 equal parts. - Aben took 1 part and gave Kugaho 2 parts. Then ask them to draw and show how many biscuits each of them got, write the fraction of the biscuit that each person received, and the numerator and the denominator in each fraction. Allow groups 2-3 minutes to do this, and then take responses. Once done, using the board, explain that: Aben got 1 out of 3 parts. So, - Whole = 3 - Part = 1 - So, the fraction = $\frac{\text{part}}{\text{whole}} = \frac{1}{3}$ - Numerator = 1, denominator = 3  Kugaho got 2 out of 3 parts. So, - Whole = 3 - Part = 2 - So, the fraction = $\frac{\text{part}}{\text{whole}} = \frac{2}{3}$ - Numerator = 2, denominator = 3 

Finally, inform learners of the names for each fraction they learnt about today:				
Fraction	$\frac{1}{2}$ 	$\frac{1}{4}$ 	$\frac{1}{3}$ 	$\frac{2}{3}$ 
Name	Half	Fourth or Quarter	Third	Two-third
Homework	- Answer Fun Time 1 on Pg. 37 of the Math Textbook. - 1-2 members from each group can talk to people in the community to find out what the stray animals they chose need to live happily. For example: - Goats may need a dry, shaded area to rest, clean water, leaves or grass to eat, and a shed to sleep in. - Pigs may need a cool, muddy space to lie in, leftover rice or vegetable peels to eat, plenty of drinking water, and a shed to sleep in.			

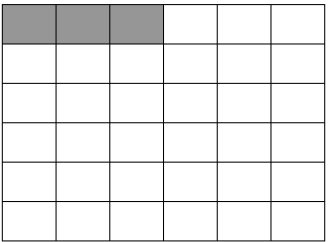
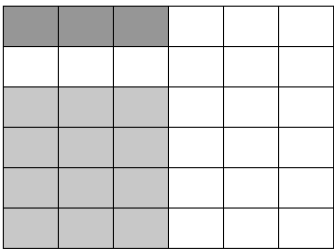
Day 2 –

Learners will use fractions to divide the shelter plot into different areas and plan the various spaces to include in their animal shelters.

Time	Activity and Description
5 minutes	What Have We Learnt So Far, and What's Next?: (Entire Class) Pairs will exchange notebooks to check each other's homework answers: Learners should have coloured the following number of parts in each question: 1. 1 out of 2 parts 2(a). 1 out of 3 parts 2(b). 2 out of 3 parts 3(a). 1 out of 4 parts 3(b). 2 out of 4 parts Ask a learner to read out the Leading Question (How can we design a space to care for stray animals in our community?). Groups will discuss and share what they have done to answer it so far. After taking responses, the teacher says: - So far, you have thought about the animals your shelter is for and what they need to live happily. You have also learned how to write fractions to show parts of a whole. - Today, you will use fractions to divide the shelter plot into different areas and plan the various spaces to include in their animal shelters.
15 minutes	How Should We Divide the Shelter Plot? (Group Work) Teacher says: - Let us divide the shelter plot into key areas! - First, discuss the key areas that you will include in your shelters. Allow groups a few minutes to discuss, and then take responses. If needed:

- Give them examples of the key areas, such as one enclosure each for pigs and hens, a path to walk between the areas, and a store room for food.
- Inform them that at this stage, they only need to think of major areas, and not specific features to include within these areas.

After taking responses, use the instructions in the table below to help learners use fractions to divide the shelter plot into key areas:

I DO	Draw a 6 x 6 grid on the board. Remind learners that each box is as big as their classroom. Teacher says: - <i>I want to assign 3 boxes on the plot to the store room to store food and other supplies.</i> Shade 3 boxes on the grid, as shown. - <i>How will I express this as a fraction? What should be the numerator and the denominator?</i> Allow groups a few seconds to discuss and then take responses. - <i>The total number of boxes is 36. So, 36 shows the whole, which will be the denominator.</i> - <i>The store room occupies 3 boxes. So, 3 shows the part, which will be the numerator.</i> - <i>So, the fraction = $\frac{\text{part}}{\text{whole}} = \frac{3}{36}$</i> 
WE DO	Teacher says: - <i>Now, I want to plan the enclosure for one type of animal.</i> Shade 12 boxes on the grid, as shown. - <i>What fraction of the total plot did I use for this enclosure?</i> Allow groups a few seconds to discuss and then take responses ($\frac{12}{36}$). 
YOU DO	Teacher says: - <i>Finally, in your groups:</i> - <i>Decide the number of boxes you would like to assign to each key area. Remember, you must include a path that connects all the key areas.</i> - <i>Label the area.</i> - <i>Write the fraction of the plot that the area occupies.</i> Provide learners with the fraction table below to help them record the fractions:

	<table><tr><th>Key Area</th><th>Boxes Assigned</th><th>Fraction of the Plot</th></tr><tr><td>Store room</td><td>3</td><td>$\frac{3}{36}$</td></tr><tr><td>Animal Enclosure 1</td><td>12</td><td>$\frac{12}{36}$</td></tr><tr><td><Similarly, add for each key area></td><td></td><td></td></tr></table> Differentiation tip: To support learners, guide them through these steps: - <u>First</u>, shade a path that runs through the middle of the plot. - <u>Next</u>, assign key areas for the shelter (like animal enclosures and food storage) on either side of the path. - <u>Then</u>, check that all key areas are connected to the path and can be easily accessed.	Key Area	Boxes Assigned	Fraction of the Plot	Store room	3	$\frac{3}{36}$	Animal Enclosure 1	12	$\frac{12}{36}$	<Similarly, add for each key area>		
Key Area	Boxes Assigned	Fraction of the Plot											
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<Similarly, add for each key area>													
	Differentiation tip: To challenge learners, ask them to check if the fractions they used add up to the whole plot. - To do this, they should add all the numerators (the number of boxes shaded for each area). The total should be 36, since the plot has 36 boxes. - If the total is not 36, ask them to recheck each fraction to find and correct the error.												
10 minutes	<u>What Will Make the Animals Feel Safe and Happy?: (Group Work)</u> Note: This section supports the Socio-Emotional Learning Outcome: Take others into account while making a decision. To achieve this outcome, learners will empathise with the animals they are designing the shelter for and consider what would make the space feel safe, comfortable, and happy for them. Teacher says: - <i>Let us now think and make a list of the features we will include in our shelters to make sure the animals are safe and happy.</i> Follow the instructions below to help groups identify the features to include in their shelters: First, draw the table below on the board (do not include the sample responses), and ask groups to copy it and list the chosen animals in it. <table><tr><th>Which Animals Will Live in Our Shelter?</th><th>What Do These Animals Need to Live Safely and Happily?</th><th>What Features Will We Include to Meet These Needs?</th></tr><tr><td>Pigs</td><td> - Leftover rice or vegetable peels to eat - Water to drink </td><td> - Mud play area - Feeding and drinking area - A covered sleeping shed </td></tr></table>	Which Animals Will Live in Our Shelter?	What Do These Animals Need to Live Safely and Happily?	What Features Will We Include to Meet These Needs?	Pigs	- Leftover rice or vegetable peels to eat - Water to drink	- Mud play area - Feeding and drinking area - A covered sleeping shed						
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Pigs	- Leftover rice or vegetable peels to eat - Water to drink	- Mud play area - Feeding and drinking area - A covered sleeping shed											

		- A cool, muddy space to play in - A covered area to sleep in	
	Goats	- Leaves or grass to eat - Water to drink - An open grassy area to play - A covered area to sleep in	- Grassy play area - Feeding and drinking area - A covered sleeping shed
<u>Next</u>, groups will discuss the needs of the animals that would live in the shelter. - <u>First</u>, ask them to think about: What would make the space feel safe, comfortable, and happy if you were that animal? - <u>Then</u>, ask them to add the needs that they found out about for homework the previous day and list them in the second column. <u>Once done</u>, groups will discuss the features they can include to meet these needs. If needed, use the sample answers in the above table to give them some ideas. <u>Finally</u>, groups will shade and label these areas within animal enclosures on their shelter plots (look at Appendix 3 for a sample). Differentiation tips: - To <i>challenge learners</i>, ask them to express each feature as a fraction of the whole plot. For example, if they assign 1 block to the feeding and drinking area, the fraction would be $\frac{1}{36}$. Once all features are assigned, ask them to check whether the total area of all features within each enclosure adds up to the whole (or the number of blocks assigned to each enclosure).			
Homework	Answer Fun Time 2 on Pg. 40 of the Math Textbook.		

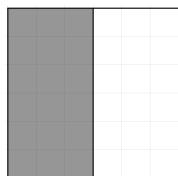
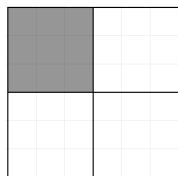
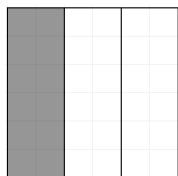
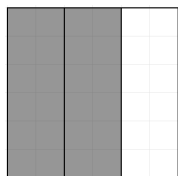
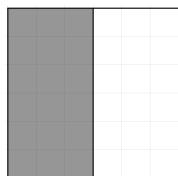
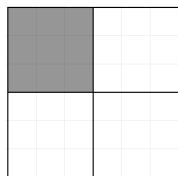
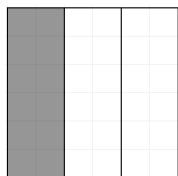
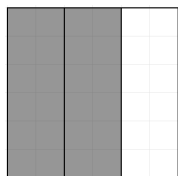
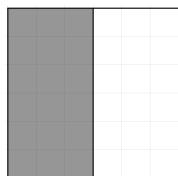
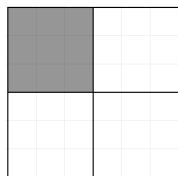
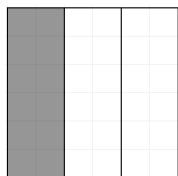
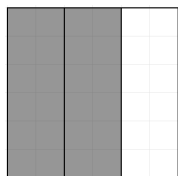
Food storage			Office		
Walking path					
Enclosure for pigs			Enclosure for goats		
	Mud pool			Open grassy field	
Feeding and drinking area			Feeding and drinking area		

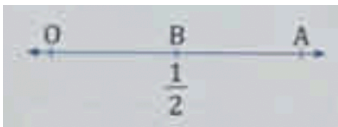
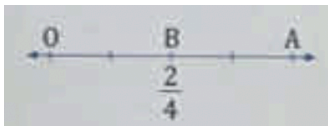
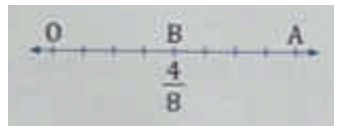
Day 3 –

Learners will finalise their shelter designs based on peer feedback and check if any key areas in their shelter plots represent common fractions such as half, fourth, third, or two-thirds.

Time	Activity and Description
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5 minutes	What Have We Learnt So Far, and What's Next?: (Entire Class) Pairs will exchange notebooks to check each other's homework answers. Use the sample answers on Pg. 116 to share the correct answers. Ask a learner to read out the Leading Question (How can we design a space to care for stray animals in our community?). Groups will discuss and share what they have done to answer it so far. After taking responses, the teacher says: - <i>So far, you have planned your shelters and included features to help animals live happily!</i> - <i>Today, you will improve your shelter designs based on peer feedback and check if you've used any of the common fractions we learned about on Day 1 in your designs.</i>							
10 minutes	How Can We Help Each Other Improve Our Work?: (Group Work) Pair each group with another group. They will exchange their shelter designs and fractions tables and give feedback using the following questions: - Are all the fractions in the table correct? - Do the fractions match the shelter design? - Does the shelter include at least two types of animals? - Are there separate spaces for each type of animal? - Are there at least two features to keep each animal happy and safe? - Is there a store room to keep food? - Is there a path that connects all the areas? Finally, each group will improve their shelter designs based on peer feedback and update the fractions table, if needed.							
15 minutes	Did We Use $\frac{1}{2}$, $\frac{1}{3}$ or $\frac{1}{4}$ in Our Shelter Designs?: (Group Work) Teacher says: - <i>What fraction names did we learn about in the first class?</i> Take responses: half, fourth, third, two-thirds - <i>How do we write these fractions?</i> Take responses: $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{3}$ - <i>Now, we will find out if we unknowingly used any of these fractions in our shelter designs!</i> Use the instructions in the table below to help learners explore equivalent fractions and check whether their shelter designs include fractions equivalent to $\frac{1}{2}$, $\frac{1}{4}$ or $\frac{1}{3}$ or $\frac{2}{3}$. <table><tr><td>I DO</td><td> Draw two biscuits on the board as shown. Teacher says: - <i>What fraction of the biscuit did Aben get?</i> Take responses: $\frac{1}{2}$ </td><td><table><tr><th>Aben</th><th>Kaguho</th></tr><tr><td></td><td></td></tr></table></td></tr></table>	I DO	Draw two biscuits on the board as shown. Teacher says: - <i>What fraction of the biscuit did Aben get?</i> Take responses: $\frac{1}{2}$	<table><tr><th>Aben</th><th>Kaguho</th></tr><tr><td></td><td></td></tr></table>	Aben	Kaguho		
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Aben	Kaguho							
								

	- What fraction of the biscuit did Kaguho get? Take responses: $\frac{2}{4}$ - Who got more biscuits? Take responses: They both got the same number of biscuits. - This tells us that $\frac{1}{2}$ and $\frac{2}{4}$ shows the same number of parts of the whole. Or, $\frac{1}{2} = \frac{2}{4}$. - Such fractions that show the same number of parts of the whole are called equivalent fractions.																				
WE DO	Draw a 6 x 6 grid as shown on the board, and shade the portion as shown. Teacher says: - For the enclosure for goats, I used the shaded area on the plot. - How many boxes does it occupy? Take responses: 12 - What fraction of the whole plot does it cover? Take responses: $\frac{12}{36}$ - Now, let us find out if $\frac{12}{36}$ is equivalent to $\frac{1}{2}$, $\frac{1}{4}$ or $\frac{1}{3}$ or $\frac{2}{3}$. Draw the table below on the board to show what $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ and $\frac{2}{3}$ of the shelter plot will look like. <table><tr><th>Fraction</th><th>$\frac{1}{2}$ of the plot</th><th>$\frac{1}{4}$ of the plot</th><th>$\frac{1}{3}$ of the plot</th><th>$\frac{2}{3}$ of the plot</th></tr><tr><td>Whole</td><td>2 parts</td><td>4 parts</td><td>3 parts</td><td>3 parts</td></tr><tr><td>Fraction of the Plot</td><td></td><td></td><td></td><td></td></tr><tr><td>Boxes Shaded</td><td>18</td><td>9</td><td>12</td><td>24</td></tr></table> Ask learners to identify which of the 4 fractions - $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ or $\frac{2}{3}$ - is equivalent to $\frac{12}{36}$. After taking responses, summarise that $\frac{1}{3}$ is equivalent to $\frac{12}{36}$ because both show the same number of boxes on the plot = 12.	Fraction	$\frac{1}{2}$ of the plot	$\frac{1}{4}$ of the plot	$\frac{1}{3}$ of the plot	$\frac{2}{3}$ of the plot	Whole	2 parts	4 parts	3 parts	3 parts	Fraction of the Plot					Boxes Shaded	18	9	12	24
Fraction	$\frac{1}{2}$ of the plot	$\frac{1}{4}$ of the plot	$\frac{1}{3}$ of the plot	$\frac{2}{3}$ of the plot																	
Whole	2 parts	4 parts	3 parts	3 parts																	
Fraction of the Plot																					
Boxes Shaded	18	9	12	24																	
YOU DO	For each key area, groups will check whether the fraction it occupies is equivalent to $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, or $\frac{2}{3}$. Encourage them to divide the work. For example,																				

	1-2 members can be responsible for checking each key area.
Differentiation tip: Ask learners to mark two points, O and A, on 3 different number lines and show how $\frac{1}{2}$, $\frac{2}{4}$ and $\frac{4}{8}$ are equivalent fractions.	
$\frac{1}{2}$	$\frac{2}{4}$
	
	$\frac{4}{8}$
	
Homework	Answer Fun Time 3 on Pg. 47 of the Math Textbook.

Day 4 –

Learners will make their shelter models.

Time	Activity and Description
5 minutes	<u>What Have We Learnt So Far, and What's Next?: (Entire Class)</u> Pairs will exchange notebooks to check each other's homework answers. Use the sample answers on Pg. 116 to share the correct answers. Ask a learner to read out the Leading Question (How can we design a space to care for stray animals in our community?). Groups will discuss and share what they have done to answer it so far. After taking responses, the teacher says: - So far, you have finalised your shelter plans and checked for any fractions equivalent to $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ or $\frac{2}{3}$ used in it. - Today, you will make your shelter models!
25 minutes	<u>How Will We Build Models Out of Our Shelter Plans?: (Group Work)</u> Distribute available materials to the groups, such as chart paper, paper and colours. First, each group will discuss the steps they will follow to make the model. Then, they will divide the tasks among themselves and start working on their assigned tasks. For example: - 1-2 members will draw the base layout on chart paper using a ruler and pencil. - 1-2 members can build walls or boundaries for animal enclosures using paper. - 1-2 members can create key features such as the store room using cut-outs. - 1-2 members can make simple 3D models of animals (e.g. goats, pigs) using paper folding. 

Homework	Invite the school staff, teachers, principal, other students, and community members for the shelter model presentation the next day.
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Day 5 –

Learners finish making their shelter models and present them to the class.

Time	Activity and Description
5 minutes	Let's Wrap Up!: (Group Work) Groups will add any finishing touches to their models, such as adding trees or fences.
20 minutes	Let's Present!: (Group Work) Groups will take turns presenting their models to the audience. As they present, they should cover the following points: - Which animals did you design the shelter for, and why? - How did you plan and design your shelter? - What features did you include to make sure the animals will live happily? - How did you use fractions in planning the shelter? - Did you find any fractions equivalent to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{3}$, or $\frac{2}{3}$ in your shelter? If yes, which ones? Encourage groups to divide the different parts of the presentation among themselves.
5 minutes	Let's Reflect!: (Group Work) Teacher says: - <i>Just like we did at the end of the previous project, let us reflect or think about aspects such as what went well, what could have been better, and what we learnt through the project.</i> - <i>For this project, let's reflect on these questions:</i> - <i>What did you learn about how animals live and what they need to stay safe and happy?</i> - <i>How did using fractions help you plan your shelter design better?</i> - <i>What was one challenge your group faced while working on this project, and how did you solve it?</i> - <i>If you could improve one part of your model or shelter plan, what would it be and why?</i> - <i>Did your group ever disagree on anything? How did you handle it?</i>

Additional enrichment activities:	- Learners can decide how many animals of each type will live in their shelter. Based on that, they can calculate the food requirements and the cost of running the shelter. For example: - If they choose to shelter 20 goats, - And each goat eats 5 kg of grass per day, - And 1 kg of grass costs ₹5, - Then they will need: - $5 \text{ kg} \times ₹5 = ₹25$ per goat per day - $₹25 \times 20 \text{ goats} = ₹500$ per day to feed all the goats
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	- Learners can also include other costs, such as: - Building the shelter (materials, labour) - Providing medical care for the animals - Storing food and maintaining clean spaces
Modifications for simplification:	If making models is difficult, learners can instead create a neat and detailed sketch of their shelter on chart paper, clearly showing the different areas and features.

ASSESSMENT CRITERIA

A majority of my learners were able to:

- ☐ Identify that a fraction represents a part of a whole.
- ☐ Express a given part of a whole as a fraction.
- ☐ Recognise common fractions ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{3}$) in visual representations.
- ☐ Represent common fractions ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{3}$) using drawings or shaded parts.
- ☐ Identify fractions that are equivalent to a given fraction.
- ☐ Design and create a model (or sketch) of a shelter that includes spaces for at least two types of animals, considering their needs.

PROJECT DETAILS

Leading question:	How can we design a space to care for stray animals in our community?
Subjects covered:	Math and Art
Age group:	11-12-year-olds
Total time required:	In class: 30 min a day for 5 days At home: 15 min a day for 4 days
Learning outcomes:	Knowledge-based Outcomes: - Identify that a fraction represents a part of a whole. - Express a given part of a whole as a fraction. - Recognise common fractions ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{3}$) in visual representations. - Represent common fractions ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{3}$) using drawings or shaded parts. - Identify fractions that are equivalent to a given fraction. 21st Century Skill Outcomes: - Think creatively while designing a shelter that meets the needs of different animals. - Think critically while using fractions to plan and divide space in the shelter layout. - Work collaboratively while discussing ideas, sharing tasks, and building the shelter model as a group. - Communicate effectively while presenting the shelter design and explaining how it meets animal needs and uses fractions. Socio-Emotional Learning Outcomes: - DM.1.2. Take others into account while making a decision.

PROJECT - CHAPTER MAPPING

Corresponding SCERT Chapter: **Chapter 6 - Fractions**

SCERT Topic	SCERT Sub-Topic	Coverage
Introduction	Fractions are parts of a whole	Yes
Basic Fractions	$\frac{1}{2}$ $\frac{1}{3}$ $\frac{2}{3}$	Yes
Fractions Names	Halves Thirds Fourths	Yes
Equivalent Fractions	Equivalent Fractions	Yes
Equivalent Fractions on a Number Line	Equivalent Fractions on a Number Line	Yes As a tip

APPENDIX 1

Story: Aben's Animal Friends

Aben saw that some pigs and goats in her village looked tired and hungry. She wanted to help them.

First, Aben helped the pigs. She collected leftover rice and vegetable peels and fed them. The pigs grunted happily and wagged their tails.

Then, she helped the goats. She gave them fresh leaves and cleaned their resting place. The goats bleated softly and followed her around.

Soon, other people in the village joined Aben. They built a small shed to protect the animals from the rain.

That month, during Metümnyo, families gathered to clean their homes, wear new clothes, and share meals. Aben shared her story, and many children promised to care for animals too.

Aben showed everyone how to care with kindness. People saw that when we help, life gets better for all.



APPENDIX 2

Shelter Plot (6 x 6) - Printable

APPENDIX 3

A Sample Shelter Design

Food storage		Office		
Walking path				
Enclosure for pigs		Enclosure for goats		
	Mud pool		Grassy field	
Feed zone		Feed zone		

