

arctic maths lesson plan 3

Test your arctic
maths skills!



Maths 3 - Arctic Take 6

Learning Objectives

- To understand the properties of the number 6, working with addition, subtraction, multiplication and division.
- To know that a snowflake is always a hexagon.
- To understand what is meant by tessellation.
- To solve a number problem using addition.

Key Vocabulary

Snowflake

Hexagon

Tessellation

Resources

- Maths Activity Sheet 3
- Website

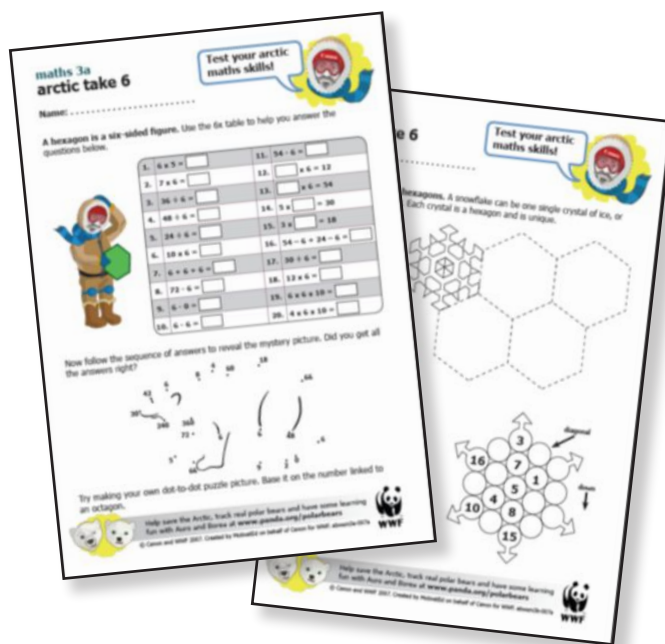
Warm-up

- Practice the six times table.
- How many number facts about 6 can the children tell you in 10 seconds?
- If 6 seals each ate 6 fish how many fish would they have eaten all together?
- How many multiples of 6 are there in 36, 42, 60?
- What is the difference between 6 and 24?
- What is 48 divided by 6?

Whole Class Introduction

- Explain to the children that they are going to be working with the number six and its properties.
- How many number facts can they tell you about 6 ($5+1$, $7-1$, 3×2 etc)?
- Show the children a die and challenge them to add up the numbers of each side of the die as quickly as they can. What do they notice (the numbers always add up to 7)?
- Demonstrate the **frozen cube** dice game to the class: ask for a volunteer to take turns throwing the die with you. You each have to keep a tally of your score. The aim is to get as high a score as possible before you throw a one.

continued...



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- Who can tell you the name of a shape that has six sides (hexagon)?
- Look at the picture of the snowflake pattern on side 2 of the activity sheet. Did the children already know that a snowflake always has six sides?
- What other natural things have six sides (a honeycomb, some flowers, etc)?
- Explore what is meant by 'tessellation' and if possible look at some tessellating patterns which you can find on the Internet. Are there any tessellating patterns in the classroom or elsewhere in the school? Examples could include floor and wall tiles.

Independent Activities

- The children should all answer the questions relating to the six times table on side one of the activity sheet. How quickly can they find the answers?
- The children will enjoy completing the dot-to-dot puzzle and can work out some more of their own based on Arctic Animals or birds.
- Side 2 of the activity sheet provides another number puzzle based on a snowflake pattern with six sides. Again the children can try making up other number patterns and puzzles of their own to play with a friend.
- Ask the children to draw some tessellating patterns with six sides – perhaps as a set of floor tiles or snowflakes.
- The children could try the **Frozen Cube** game with a partner or in a small group. With practise the children will begin to work out some tactics to avoid losing their score so far. They could for example decide to 'pass' on a turn and give the die to the next player.

Plenary

- Challenge the children to another round of mental maths about the properties of six. This time they take turns to think of a question to ask another member of the class.
- Invite the children who have created tessellating patterns to show and describe their work to the rest of the class.

Extension Activities

- Working with a partner the children could make up another game with die or dice and think of a good name for it that has something to do with the Arctic.
- They can also write a page of 'take 6' number problems and puzzles and type it into the computer, add a piece of clip art and print it to take home.
- Create an extended 6x table for the numbers of an arctic species. If global warming continues we go down the table but we can go up it if we start to do actions to stop global warming. *See actions on collector cards on site.*
- Compile an 'arctic 6' puzzle book for a younger class. This could contain:
 - 6 arctic animals
 - 6 arctic Plants
 - Some snowflake patterns
 - Six igloos
 - Six number puzzles, such as dot-to-dot pictures



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