Play with Patterns

Patterns Around Us
In everyday life, we see many patterns.
For example, we see:

Barbed wire

Grills of a window

A snake

Look around you and list three things in which you find some pattern. ________  ________  ________  ________

Draw some patterns which you have found around yourself.
Hello! I am Pallavi. I live in Jaipur. My city is known for clothes with block prints. Have a look at some of the block print designs made by my mother.

She makes these designs by using blocks again and again. One day I got hold of the blocks and made a beautiful design.

You will see that these designs have been made by using the same block in different ways. Can you see a pattern in the way each block is repeated?
Pictures in a Pattern

I have made some patterns of pictures. I have used a rule for each pattern.

A A B A A B

The rule for this pattern is — There is one girl after every 2 boys. Then this is repeated.

In this pattern there is one arrow up and one down. Then this is repeated.

Practice Time

Given below are some patterns.

Figure out the rule for each and continue the pattern.

a) [Vase images]

b) [Letter images]
f) Morning, afternoon, evening, night, morning, ...........

Growing Patterns

I have made a new pattern.

But this pattern keeps on growing. It does not repeat.

So what? It does have a rule.

Can you see the rule and continue the pattern?
Try these also.

My Own Patterns

Here is your space to make your own patterns:

i) 

ii) 

iii) 

iv) 

Ask your friends to continue the patterns made by you.
Number Patterns

We have made some patterns with pictures. We can make patterns with numbers too. Like 21, 41, 61, 81, 101, ...........

You know the next number, don't you?

This is a growing pattern. It can go on and on.

21, 41, 61, 81, 101, 121, 141, 161, ...........

A. Look for the rules and continue these growing patterns:

a) 51, 56, 61, 66, ____ , ____ ...........

b) 7, ____ , 21, 28, 35, ____ , ____ ...........

c) 2, 4, 8, 16, 32, ____ , ____ , ____

d) 12A, 13B, 14C, ____ , ____

B. Look at these growing patterns. Find out what to add to each number to get the next one:

a) 1, 3, 6, 10, ____ , ____ , ____ , ____ , ____

b) 0, 2, 6, 12, ____ , ____ , ____ , ____ , ____

c) 1, 3, 7, 13, ____ , ____ , ____ , ____ , ____

d) 2, 3, 6, 11, 18, ____ , ____ , ____ , ____ , ____

This chapter helps children observe and understand patterns around them. They can be given more examples of repeating or growing patterns to recognise the motif or basic unit which generates the patterns. Making secret messages or codes also helps pattern recognition. As their algebraic thinking develops, they will realise that the pattern created by the rule boy boy girl is the same as A A B or ↑↑↓ ↑↑↓↑↑↓ ↑↑↓↑↑↓. Some interesting and important number patterns that relate to mathematical operations are given.
Secret Messages

Amrita and Paritosh are writing secret messages.

Can you tell what they are trying to say?
These are two secret messages. Look for the patterns and find the hidden sentences.

Now you also make your own secret messages.

__________________
__________________
__________________
**Even and Odd Number Patterns**

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Half these numbers are in yellow. What patterns do you see in these numbers? Continue the same pattern and fill in the blanks:

96, 98, ___, 102, ___, ___, ___, ___, ___

How far can you continue this pattern?

These numbers have a special name. They are called **even** numbers.

Do any of these even numbers end with 3 or 5?

What do even numbers end with?

Look at the pattern of numbers in blue. Continue the pattern and fill in the blanks:

99, 101, ___, 105, 107, ___, ___, ___

What do the numbers in blue end with?
All numbers that end with 1, 3, 5, 7 or 9 are called **odd** numbers.

Write all odd numbers between 400 and 410.

_________________________

Write all even numbers between 155 and 165.

_________________________

If we add 1 to any odd number we get an _______ (even/odd) number.

If we add 1 to any even number we get an _______ (even/odd) number.

What do you get if you add an even number to an odd number?

**Names in an Order**

Adil has to arrange this list so that the names starting with A come first and then come those with B, C, D and so on. Number these names in the order in which they will come.

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Jalaj is proud to have a special name. He says if you read it backwards it is still the same.

Which of the following names have the same pattern? Mark ✓.

Harsh, Anna, Kanak, Munna, Ongbi