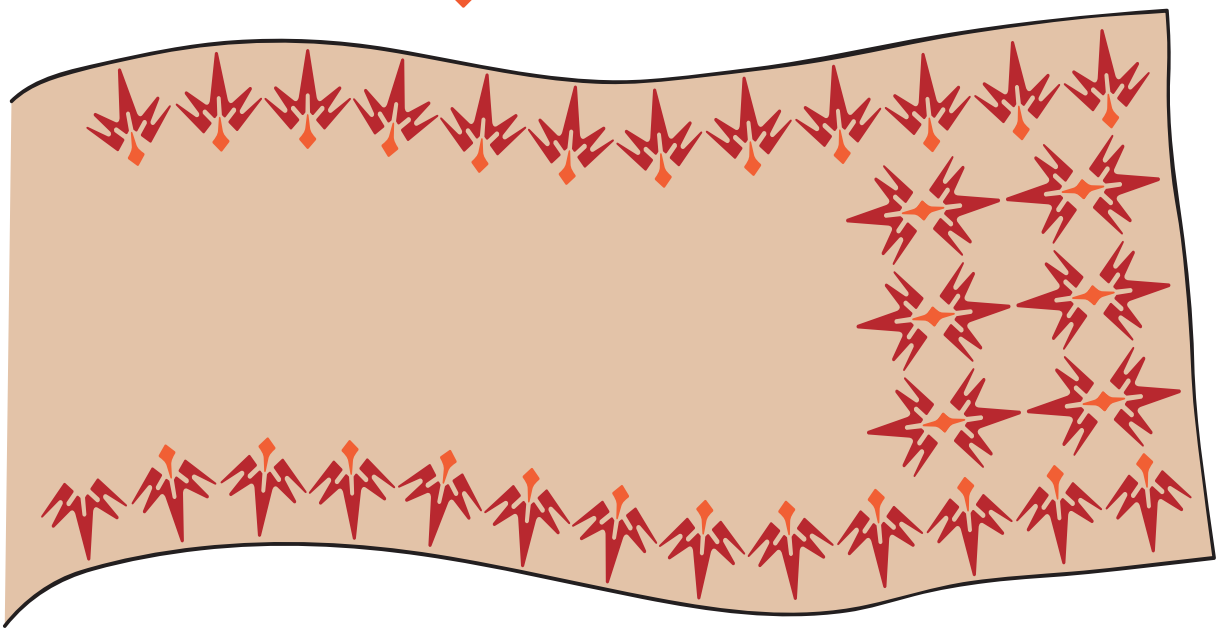
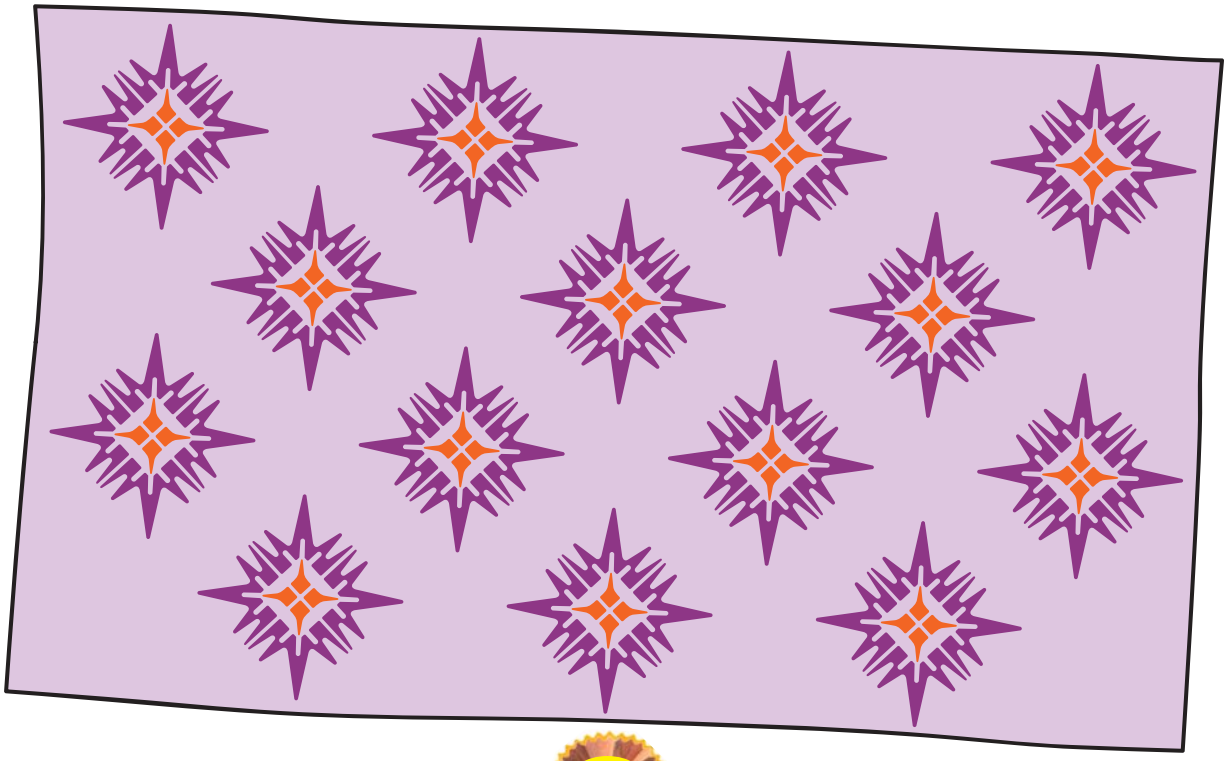
10 Play with Patterns

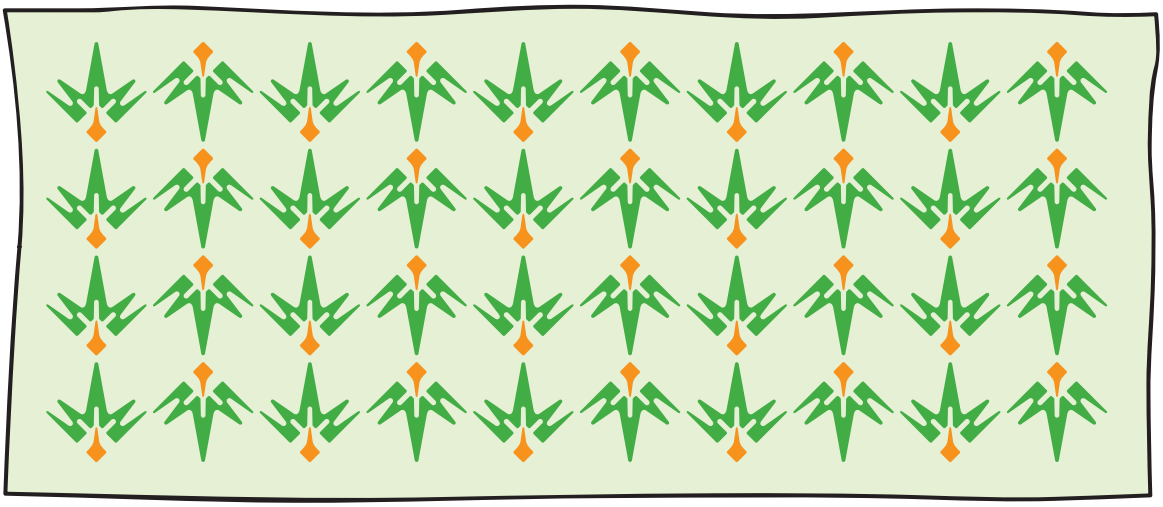
Tinu used this block to make a sari.



Next he made this bedsheet with the same block.

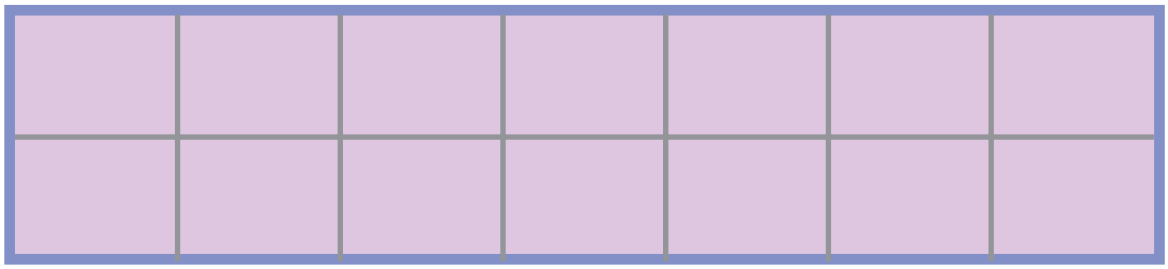


He also made this *dupatta* with the same block.

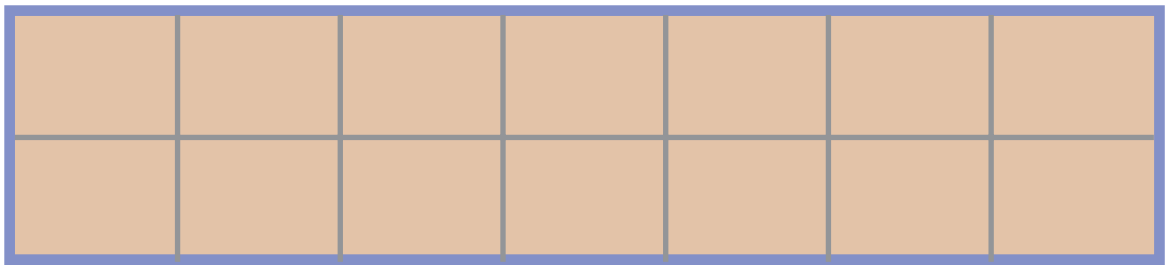


Can you see how Tinu has made different patterns using the same block? Now you too make 3 different patterns using .

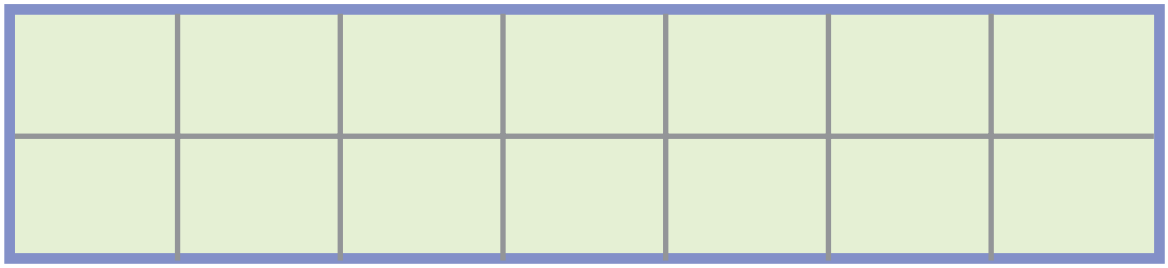
Pattern 1



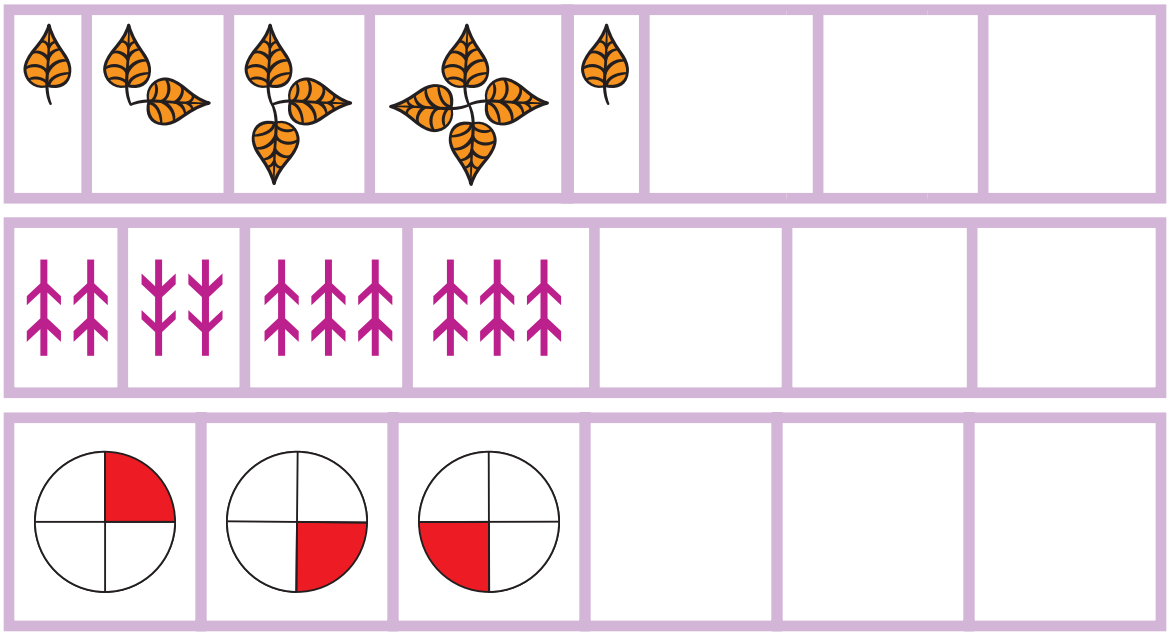
Pattern 2



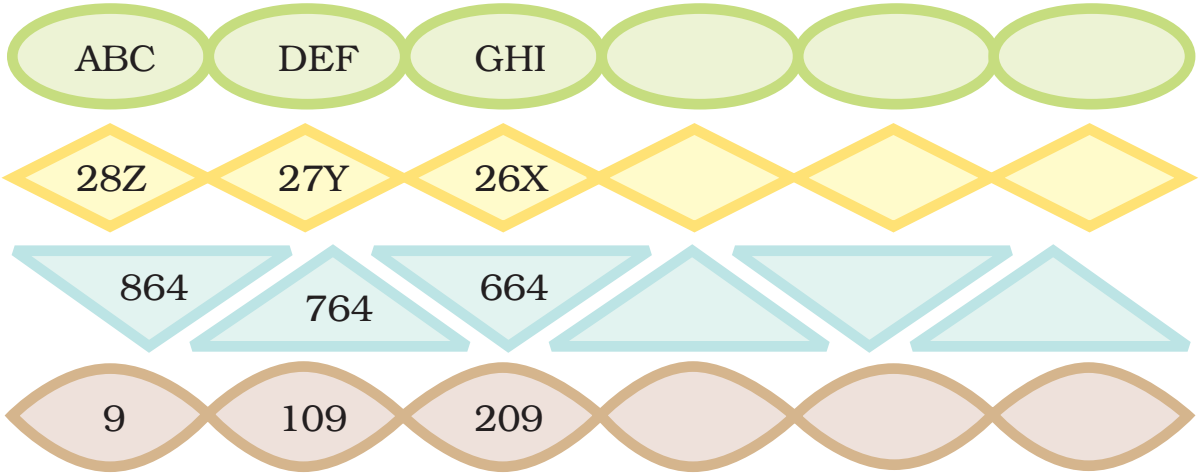
Pattern 3



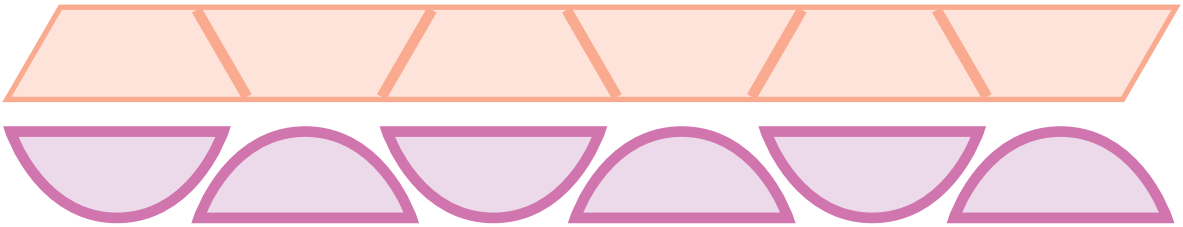
Yamini has used her blocks to make a few patterns. Help her to take these patterns forward.



We can also make patterns with numbers and letters. Below are a few examples. Can you take them forward?



Now write your own number patterns.



Make a pattern without numbers.

No Number Comes Twice

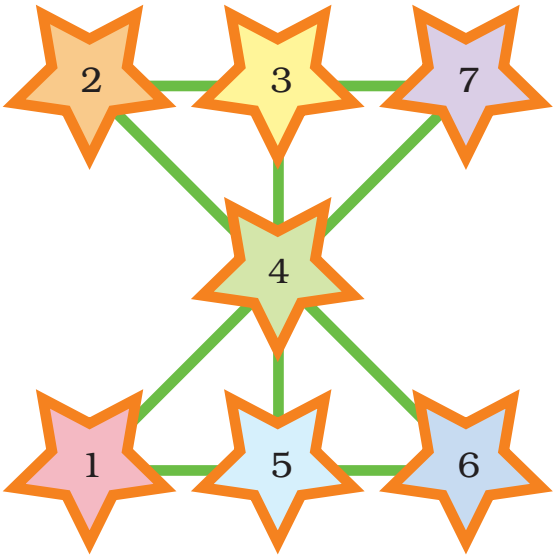
Look at the number box. Can you see a pattern?

1	2	3
3	1	2
2	3	1

Now you try writing the letters — A, B, C in the box so that no letter comes twice in any line.

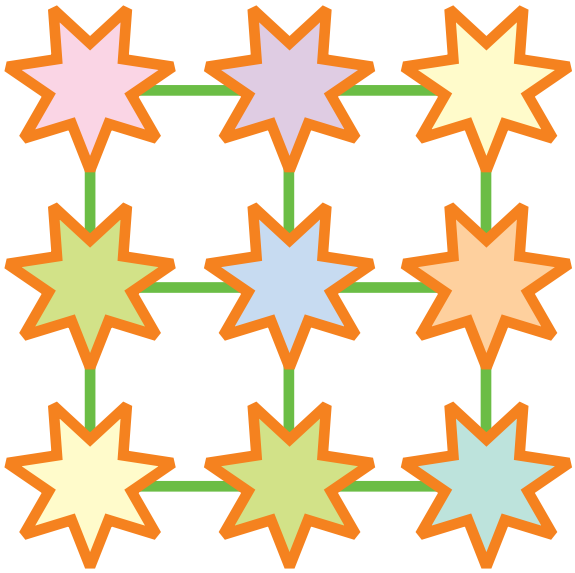
We have not used the terms row or column here, but using the word 'line' teachers may discuss the idea of rows and columns.

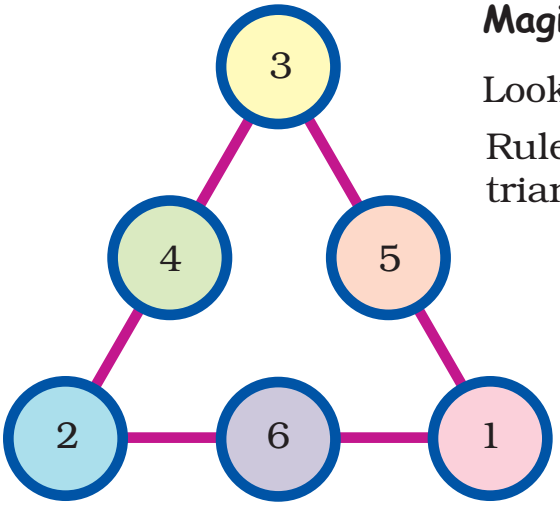
Magic Patterns



Look at the pattern of numbers 1 to 7 . See how each line adds up to 12!

Now you fill these stars. Use numbers 1 – 9 and the **rule** that the numbers on each line add up to 15.





Magic Triangles

Look at this number pattern .

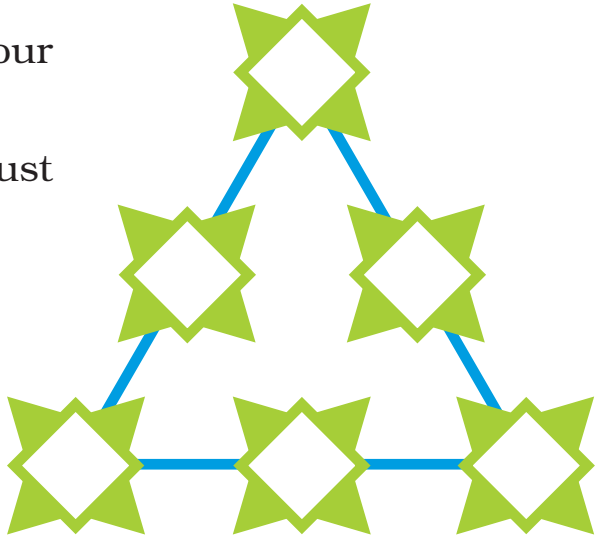
Rule: Numbers on each side of the triangle add up to 9.

3 + 4 + 2 = 9

See if the other sides of the triangle also add up to 9.

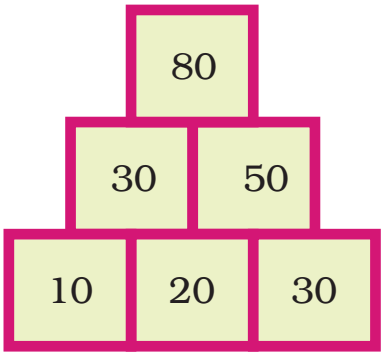
Now use numbers 1 – 6 to make your own magic triangle.

Rule: Numbers on each side must add up to 10.



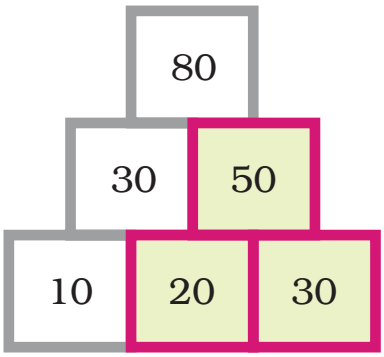
Number Towers

Numbers can be arranged as a tower. We start from below and get this number pattern.

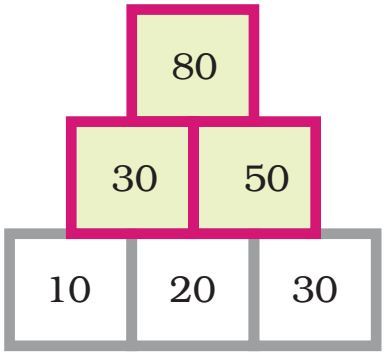


Can you see the rule for this pattern?

Rule: We add 2 numbers below to get the number in the box above them.

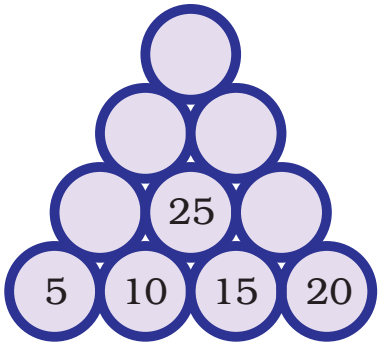


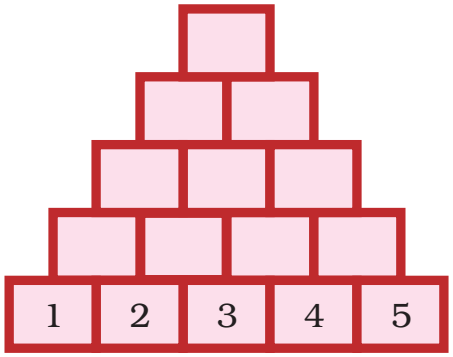
20 + 30 = 50



30 + 50 = 80

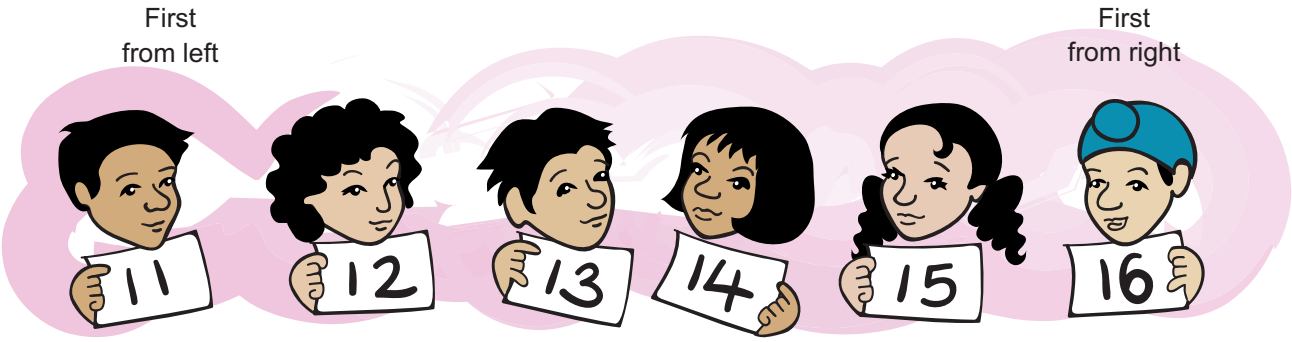
Using the same rule, complete these number towers.





The Same Sum Rule

Some friends are playing with number cards. See how they add.



11	+	16	=	27
12	+	15	=	27
13	+	14	=	27

Can you see the rule which gives us the same sum each time?

Rule: We get the same sum when we add the two numbers —

First from left	and	First from right
Second from left	and	Second from right
Third from left	and	Third from right

Now you write any number and the three numbers after that. Make a pattern using the rule.

See if you get the same sum.

	+		=
	+		=

24-01-07

Patterns with Addition

1 + 2 + 3 = 6

2 + 3 + 4 = 9

3 + 4 + 5 = 12

1 + 2 + 3 + 4 = 10

2 + 3 + 4 + 5 = 14

3 + 4 + 5 + 6 = 18

Now, you try to make such a pattern with 5 numbers in order.

__ + __ + __ + __ + __ = __

__ + __ + __ + __ + __ = __

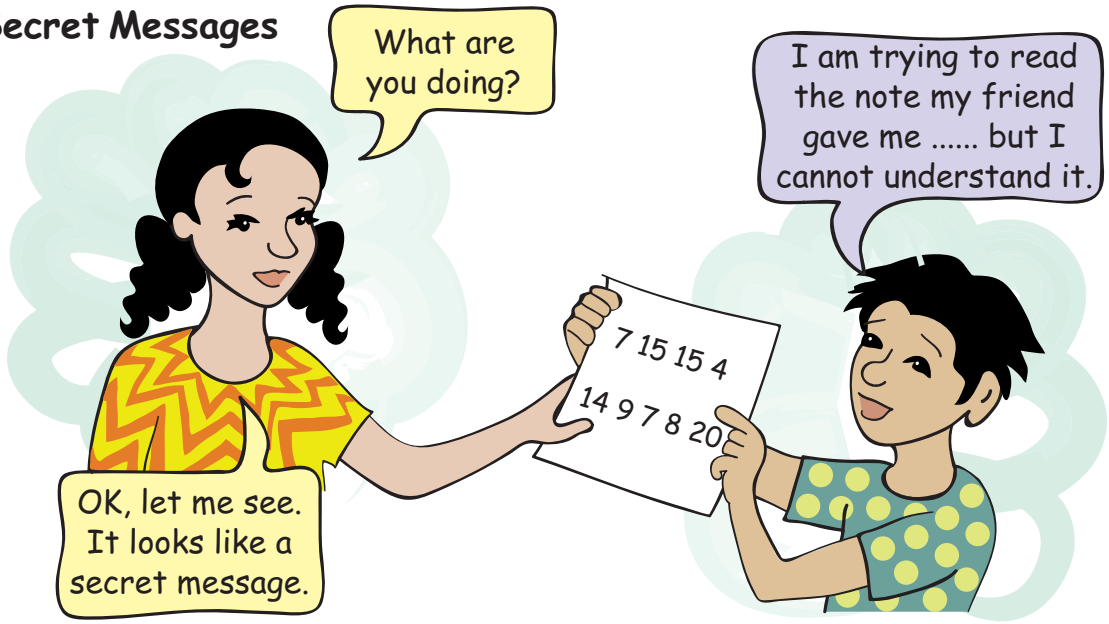
__ + __ + __ + __ + __ = __

__ + __ + __ + __ + __ = __

__ + __ + __ + __ + __ = __

Does the sum grow by 5 each time?

Secret Messages



Yamini explained the rule — Numbers have been used for letters.

For example, 'J' is 10, 'P' is 16. So JUMP is 10 21 13 16 .

❊ Complete this list of letters and numbers to help you.

A	B	C	D	E																					
1	2	3	4	5																					

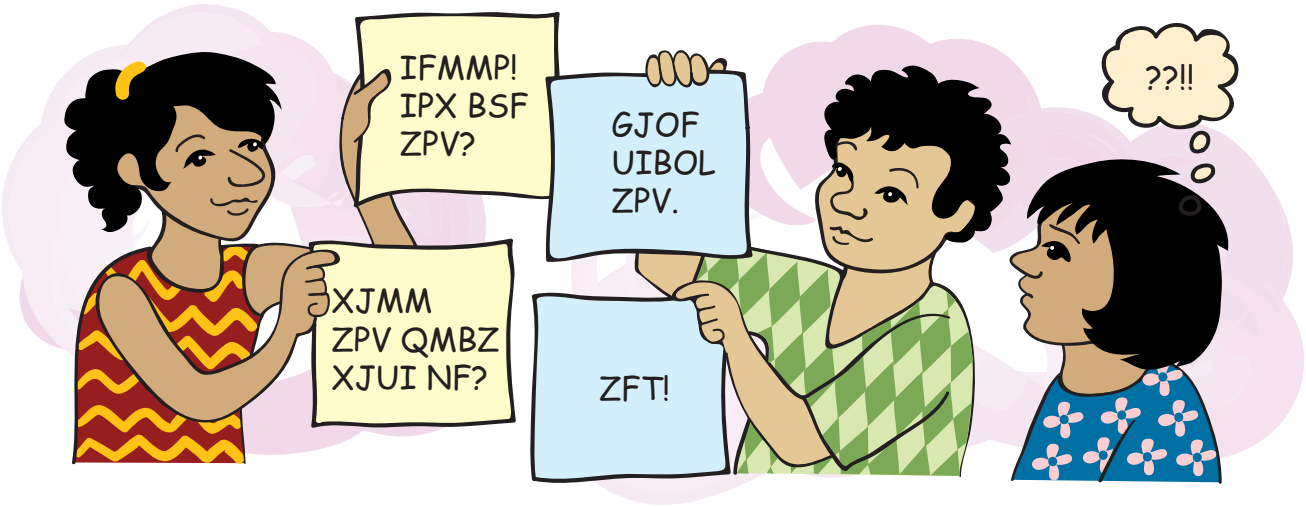
❊ Teenu wants to write to his friend 'Good Morning'.

What will he write by using the same rule?

❊ If we change the rule and write 1 in place of 'B', 3 in place of 'D' and so on, then how will we write 'Let Us Dance'?

Coding and decoding secret messages is also a part of recognising patterns. Recognising rules is important for the development of mathematical thinking.

More Secret Messages



Shablu and Jaggu are playing a game. They are writing some secret messages. But Kahuli is not able to understand them. So Jaggu explained the rule —

Jaggu – You see, we have changed each letter by its next letter. That is, we write 'G' in place of 'F', 'O' in place of 'N'. So YES becomes ZFT.

Kahuli – Oh! Now I understand.

Kahuli – See what I have written XF BSF GSJFOE T

- What was Kahuli's secret message? _____
- What did Shablu and Jaggu write?

  _____

- Use the same rule to write — 'Meet me on the moon'.

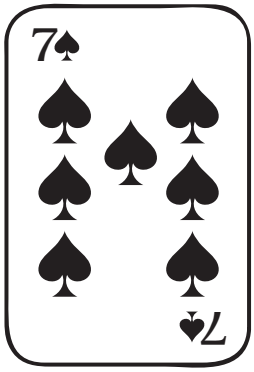
  _____

- Make different rules and ask your friends to crack the secret message.

Upside Down

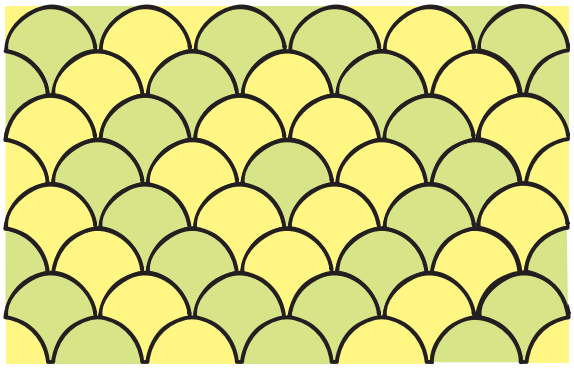
Anisha is playing. She is showing her friends that she can stand on her head.

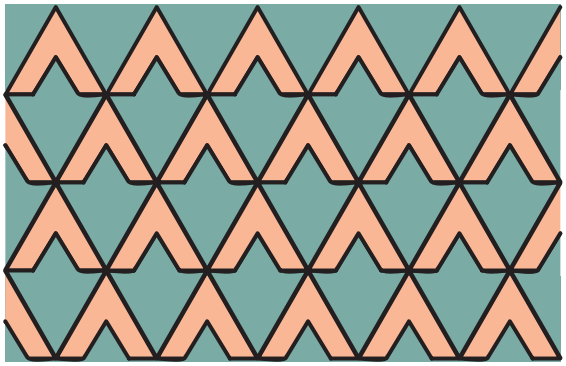
Now, Anisha is playing with this card. Draw what it will look like when upside down.



Floor Patterns

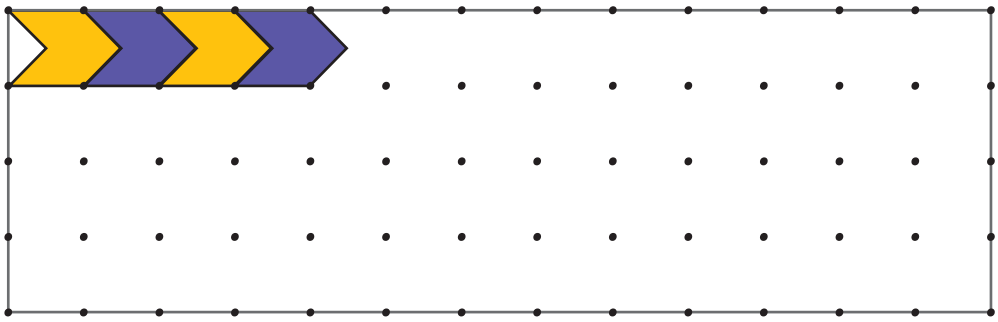
Have you ever seen a floor with tiles of these shapes?





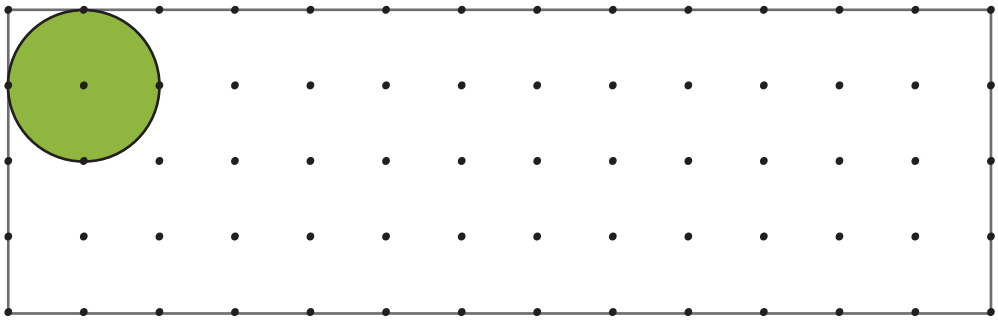
These designs are made by covering the floor completely with tiles that fit into each other without any gaps.

a) Now, you cover this floor with this tile.

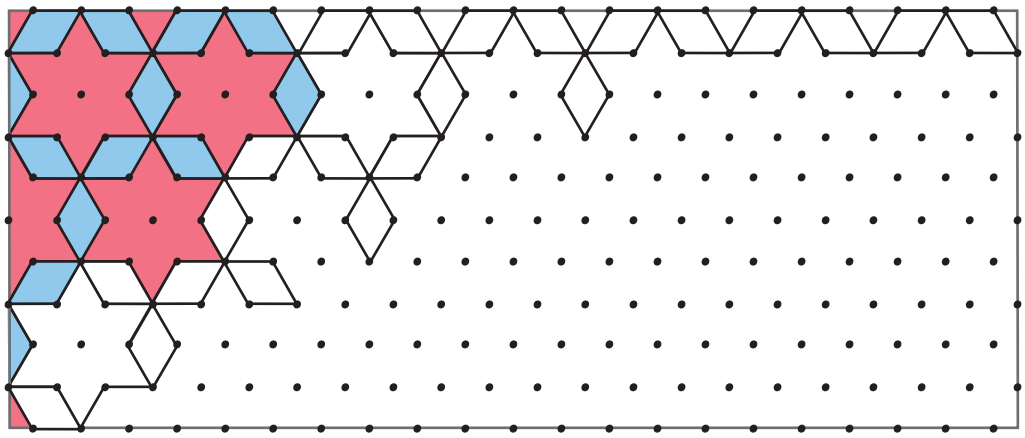


Can you make such a floor design with a tile like a circle?

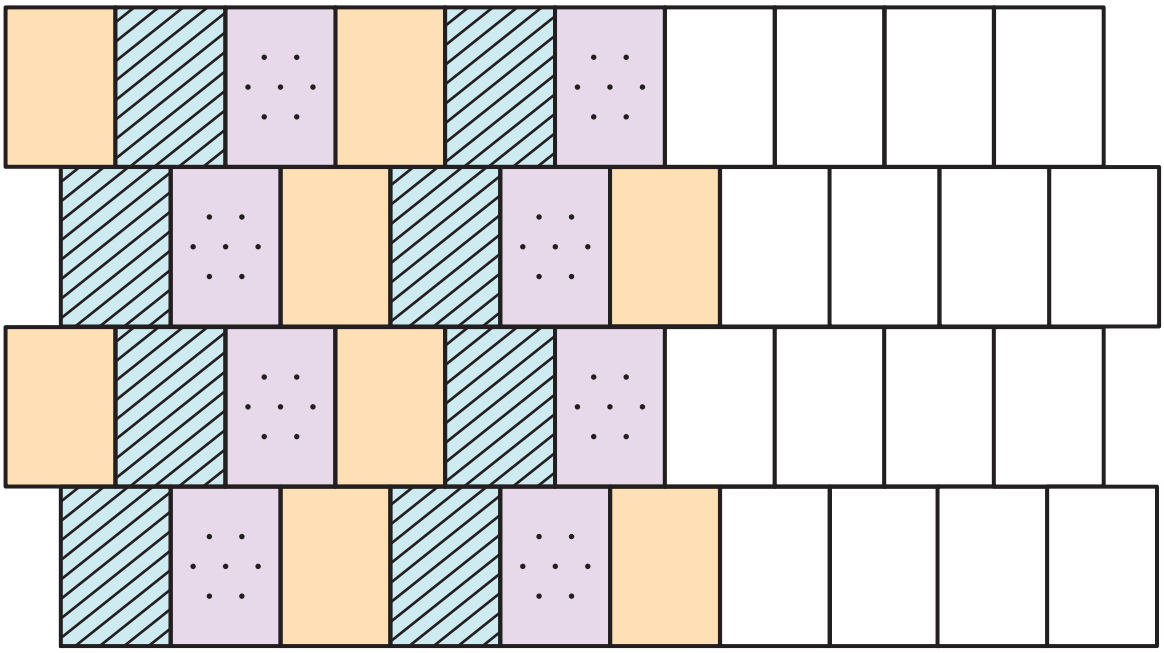
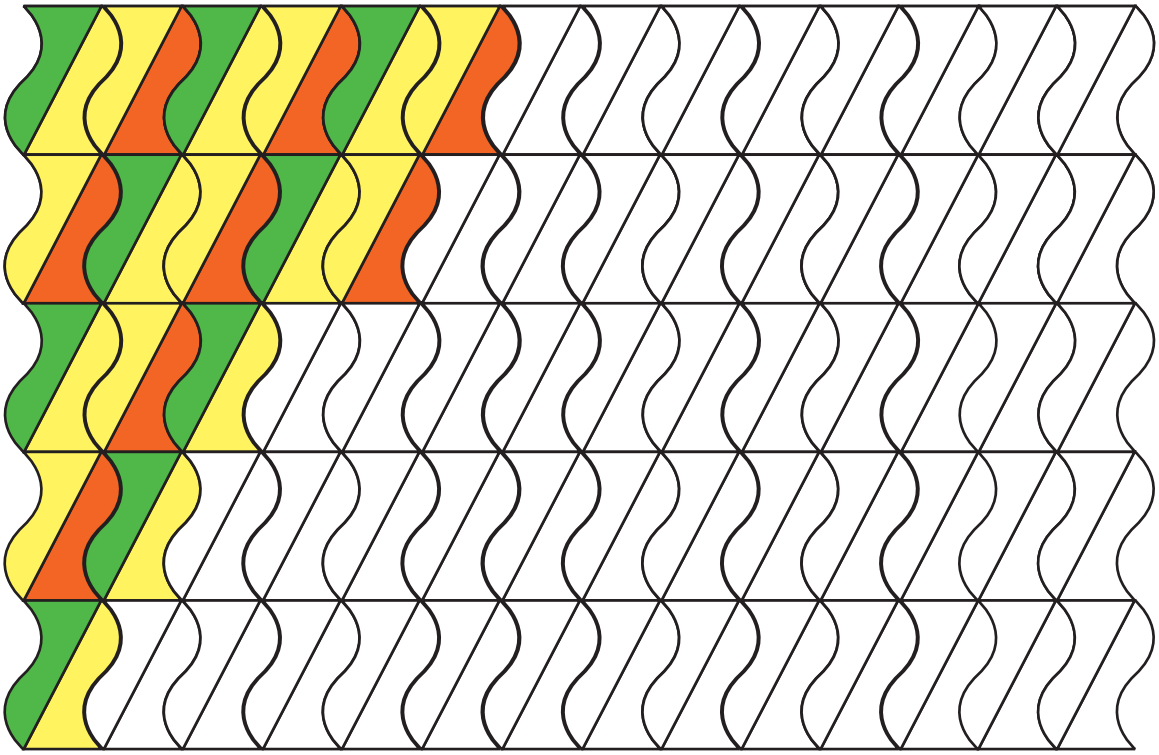
b) Try with this green tile without leaving a gap. Could you do it? Discuss with your friends.



c) Complete this tiling pattern.



d) Ramaiya has made a wall with his blocks. Can you complete this for him?



e) Renu began to paint this wall. Now you help her to complete it.