DRAW WITH FIBONACCI SEQUENCE

General information	
Respective blueprint	Draw with Fibonacci sequence
Description	This lesson is about the Fibonacci sequence phenomenon found everywhere in nature. Students learn to draw the Fibonacci spiral and use it in making drawings. We also encourage students to find Fibonacci sequences in their natural surroundings.
Learning objectives	- explain what the Fibonacci sequence is - recognise that each subsequent number is the sum of the previous two numbers - recognise the Fibonacci sequence in real-world examples - create visual representations of the Fibonacci sequence on paper
Related curricular subjects	Mathematics, Science, Art
Duration	**90 min**

Level of difficulty	Basic	Medium	Advanced
	☐	☑	☐

Inclusivity guidelines	
How to integrate students with SLD	- Ensure that the images used match the text - Avoid distractions and unnecessary information. - Use a multisensory approach: wherever possible, provide different ways for learners to interact with the content (touch, manipulate, play,
How to integrate students who work faster	Students who work faster can analyse why the Fibonacci sequence is an interesting and important mathematical concept.

Step-by-step description of the lesson

Step 1: Introduction	Estimated time: 20 min

- Ask students if they know anything about the Fibonacci sequence
- Ask one student to draw a seashell on board and discuss the shape of a seashell
- Explain the Fibonacci and the Fibonacci sequence using PPT in the attachment
- Focus on the presence of the Fibonacci sequence in nature

Step 2: Draw a Fibonacci spiral	Estimated time: 50 min

Using PPT, show students how to draw their own spiral and encourage them to draw based on the resulting spiral. It will be easier if students draw on paper with squares.

Step 3: Evaluation	Estimated time: 20 min

Ask students where they can find Fibonacci sequence in nature. Give them homework on this topic. They can observe trees, leaves, flowers…
Give each student self-assessment template, and paper with questions to answer.

Assessment activities

Activity 1: Self evaluation
Use template for self-evaluation and satisfaction with the lesson.
Activity 2: Questions
Use questions in attachment for each student.

Attachments

- PPT Draw with Fibonacci Sequence
- Self-evaluation
- Questions: Fibonacci sequence

References:
https://en.wikipedia.org/wiki/Fibonacci

SELF-EVALUATION OF THE GROUP WORK

WHAT IS EVALUATED?	✓ OR -
A. We completed the task successfully.	
B. All members of the group participated in the execution of the task.	
C. Each member of the group performed his part of the task responsibly.	
D. During the work in the group, we respected each other's different opinions.	
E. My participation in the execution of the task significantly contributed to the final results of the work.	
F. Working in a group makes it easier for me to understand the topic.	
G. I can successfully explain the topic we learned about by working in a group.	

Answer the questions: Fibonacci sequence

**Choose the correct answer:**

1. **Who was Leonardo of Pisa?**

   A. He was an astronomer.
   B. He was a matematician.
   C. He was a priest.

2. **What is correct for the Fibonacci sequence?**

   A. It presents a series of numbers where each is the sum of the two preceding ones.
   B. Fibonacci sequence is very rare in nature.
   C. It presents a series of numbers where each number is the sum of all preceding numbers.

3. **If you understand the Fibonacci sequence you can write five numbers that follow the presented numbers:**

0, 1, 1, 2, 3, 5, 8, ___, ____, ____, ____, ____ …..
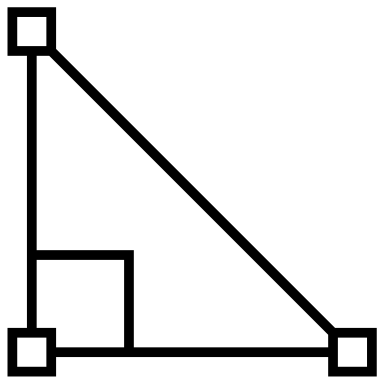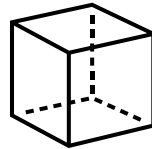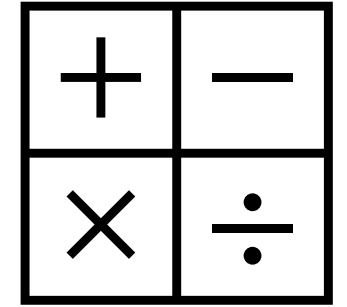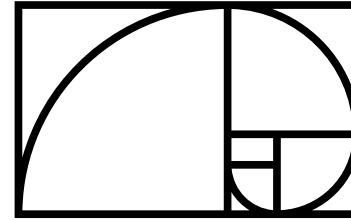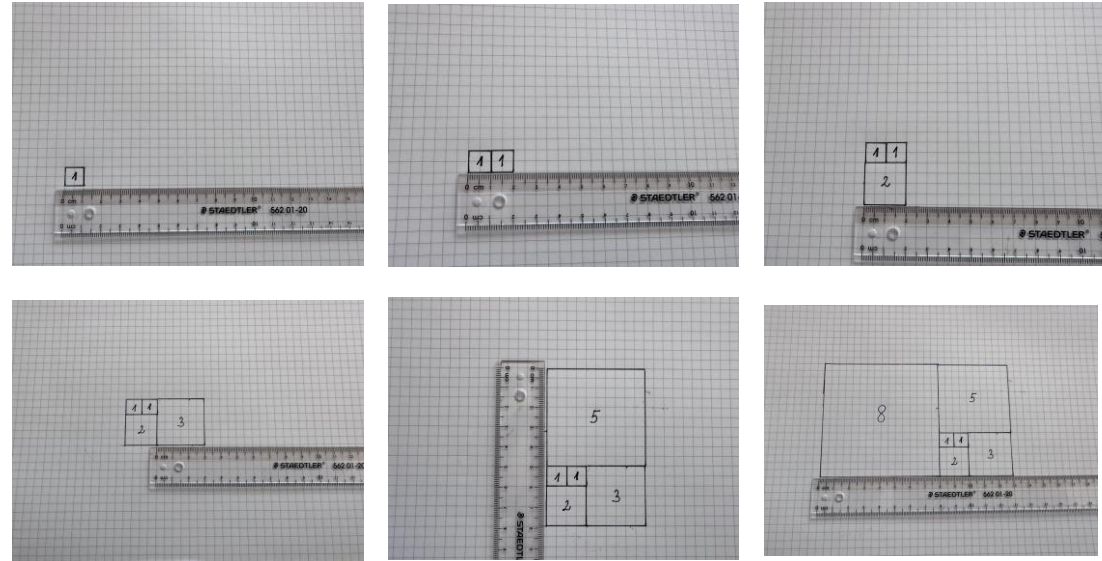
Draw with Fibonacci sequence
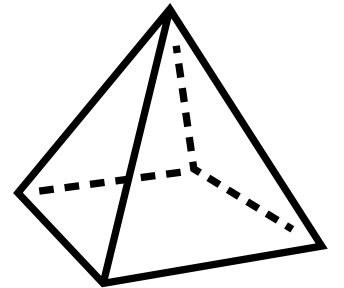
Who was Leonardo of Pisa?

- Fibonacci, also known as Leonardo Bonacci, Leonardo of Pisa, or Leonardo Bigollo Pisano, was an Italian mathematician from the Republic of Pisa, considered to be "the most talented Western mathematician of the Middle Ages »

- At that time he traveled a lot and discovered this sequence that appears in nature
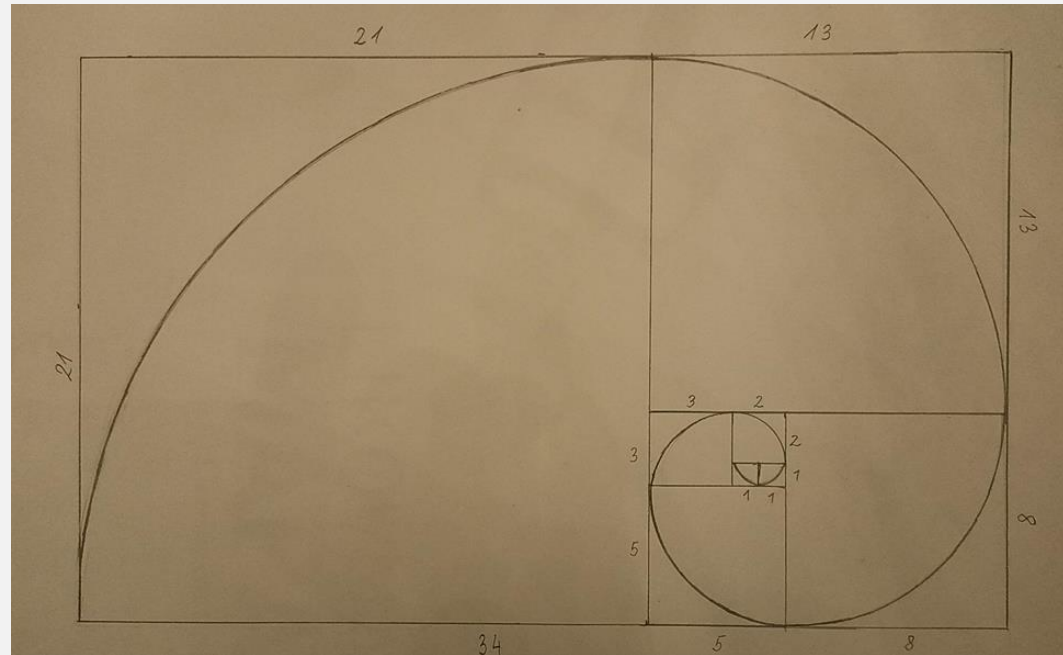
WHAT'S THE FIBONACCI SEQUENCE?

- A series of numbers where each number is the sum of the two preceding ones

- Starting point: 0, 1

- Example: 0, 1, 1, 2, 3, 5, 8, 13, …

LET'S VISUALISE:

LET'S CONNECT THE EDGES WITH THE CURVE

EXAMPLES OF THE FIBONACCI SEQUENCE IN NATURE…

HURRICANE

SEASHELL

PINECONES

EVEN GALAXIES…

MAKE YOUR OWN FIBONACCI INSPIRED ART!

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