CLIXO
Classroom

Clixo Patterns

Activity Guide

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Objective

Students will explore the concept of patterns by using Clixo pieces to create and understand simple A/B, A/B/B, and A/B/C patterns. This hands-on experience helps young learners develop pattern recognition skills while fostering creativity and fine motor coordination.

Materials for Each Student

- Various Clixo pieces, with multiples of the same piece
- A flat surface to work on, or metallic board to stick the pieces on.

Skills

- Creativity
- Problem solving
- Fine motor
- Collaboration
- Math

Ages

K – 2

Duration

30 minutes

Group Size

3–4 students per group



Introduce

Before class

- Arrange a workspace large enough for each student to have their materials laid out in front of them.
- Distribute the Clixo pieces to each student.

Step 1: What Are Patterns?

- **Objective:** Help students understand the concept of patterns through a simple and interactive explanation.
- **Start with a Question:** Begin by asking, "Have you ever noticed things that repeat in the same way, like stripes on a zebra or the colors of a rainbow? Those are called patterns! Patterns are when something happens again and again in a certain order."
- **Demonstrate with Real-Life Examples:** Show a few everyday patterns, like:
  - Alternating colors on clothing (e.g., red-blue-red-blue).
  - Shapes on the classroom rug (e.g., circle-square-circle-square).
  - Clapping a simple rhythm (e.g., clap-pat-clap-pat). Ask the students to identify what comes next in each pattern.
- **Relate to the Activity:** Tell the students, "Today, we're going to make our own patterns using Clixo pieces. You'll get to choose colors and shapes and put them in a special order to create your very own patterns!"



Build and Create

Step 2: Create Your Base

- Connect Two Quads: Begin by finding 2 Quad pieces. Connect them to form a sturdy base for your pattern wheel.

Step 3: Prepare the Pattern Wheel

- Fold and Flip a Quad: Take a third Quad piece and fold two of its sides together. Then, flip it over and connect the remaining two sides. Place this folded Quad on your base so that it can hold the pattern pieces.

Step 4: Build the Patterns

- Choose Your Colors: Find Flaps and Flops in different colors to start creating your patterns.
- **A/B Pattern:** Begin by creating an A/B pattern, where two colors alternate. Attach the Flaps and Flops to your pattern wheel in this alternating sequence.
- **A/B/B Pattern:** Move on to create an A/B/B pattern, where the first color is followed by two of the second color. Attach your pieces accordingly.
- **A/B/C Pattern:** Finally, try creating an A/B/C pattern, introducing a third color into the sequence.



Share & Reflect

- Ask students to explain their patterns. Can they describe the sequence and predict what would come next if the pattern continued?
- **Wrap-up:**
  - At the end of the activity, have a brief discussion with the students about what they learned. Ask questions like:
    - "What was your favorite pattern to create?"
    - "How can we use patterns in other things we do?"
  - This activity reinforces pattern recognition and provides a hands-on, engaging way for young students to explore basic math concepts using the Clixo building toy.



Extension Activities

ENCOURAGE STUDENTS TO EXPERIMENT WITH OTHER PATTERN TYPES

Can they create an A/A/B pattern? How about an A/B/C/D pattern? Let them be as creative as they wish!

STORY TIME WITH PATTERNS

Ask students to describe the story of their pattern. For example, "The red piece represents the sun, the blue is the sky, and the green is the grass."

GROUP PATTERN CREATION

In small groups, challenge students to combine their pieces to create a large pattern. This collaborative activity can help build teamwork and communication skills.

EXTENDING PATTERN THINKING (GRADE 3)

Analyze the Pattern: Present a repeating pattern built with Clixo pieces (e.g., A/B/C, A/A/B/B, or A/B/B/C). Students observe the sequence and describe what they notice. **Identify the Structure:** Students determine the repeating unit and explain how the pattern repeats. **Extend the Sequence:** Using Clixo pieces, students continue the pattern several steps and justify why their extension follows the pattern rule. **Create and Exchange Patterns:** Students design their own repeating pattern with at least three elements and trade patterns with a partner to identify the rule and extend the sequence. **Explain the Pattern Rule:** Students describe the rule of the pattern using words, drawings, or symbols.

Educational Standards

CCSS MATHEMATICS

K.MD.1
Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

K.MD.3
Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

K.G.1
Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

K.G.2
Correctly name shapes regardless of their orientations or overall size.

1.MD.4
Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

1.G.1
Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

2.OA.3
Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.

2.OA.4
Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

ISTE STANDARDS FOR STUDENTS

1.1.a
Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.

1.3.d
Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

1.4.a
Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

1.5.d
Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

1.6.c
Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.

1.7.b
Use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.