

# 3rd Grade

## Nature's Number Patterns on the Trail



Duration: 60-90 minutes

.NC Standard Course of Study: *Identify arithmetic patterns and explain them using properties of operations*

Objective: Students will explore arithmetic patterns found along the trail and use properties of operations to identify and explain the patterns.

### Materials:

- Clipboards
- Pencils
- Graph paper or worksheets with a grid
- Rulers (optional)
- Collection bags (for pinecones, acorns, or other natural items to be used as manipulatives)

### Introduction (10 minutes):

1. Begin the lesson in the classroom or at the trailhead.
2. Review the concept of arithmetic patterns and the properties of operations.
3. Introduce the lesson objective and inform students that they will be searching for arithmetic patterns in nature during their walk on the wooded trail

### Main Activity (40-60 minutes):

1. Divide students into small groups of 3-4, and assign each group a section of the trail to explore.
2. Instruct students to search for examples of arithmetic patterns in the natural environment (e.g., patterns in tree bark, leaf arrangement, or pinecone scales). Encourage them to use their senses and creativity to find patterns.

3. Provide each group with a clipboard, pencils, graph paper or grid worksheets, and a collection bag for gathering natural items.
4. Have students document their observations by sketching or describing the patterns they find on their graph paper or grid worksheets. If possible, encourage them to take photographs for later reference.
5. Allow students to collect small natural items (e.g., pine cones or acorns) to use as manipulatives for creating their own arithmetic patterns.
6. After exploring the trail, have students reconvene in a designated area to share and discuss their findings.

### Conclusion (10-20 minutes):

1. Bring the class together and have each group present their findings, explaining the arithmetic patterns they discovered and how they relate to the properties of operations.
2. Discuss any patterns that were common among the groups and address any questions or misconceptions.
3. Encourage students to reflect on how they can apply their understanding of arithmetic patterns to everyday life and other mathematical concepts.

*Assessment:* Assess students based on their participation in the group activity, the accuracy of their documented patterns, and their ability to explain the patterns using properties of operations.

*Extension:* As a follow-up activity, have students create their own arithmetic patterns using the natural items they collected during the lesson. They can arrange the items on a large sheet of paper or poster board, and then present their patterns to the class, explaining the properties of operations that apply to their creations.

*Teacher's notes:*

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