Roversa and the Three Little Pigs: An Ordinal Adventure

Overview:

Students will use computational thinking to retell “The Three Little Pigs” by programming Roversa to visit specific locations based on ordinal positions (1st-6th).

What will students do?	What will students accomplish/learn?
Students will use Roversa’s directional buttons to program sequences that move the robot to specific ordinal positions representing houses and building materials.	Students will demonstrate an understanding of ordinal position and sequencing.

Vocabulary	Definition
Ordinal Number	A number that tells the position of something in a list (e.g. 1st, 2nd, 3rd).
Sequence	A set of instructions followed in a specific order.
Algorithm	A step-by-step plan to solve a problem or complete a task.
Debug	To find and fix a mistake in a program.
Event	An action that causes something to happen.

Estimated time	Materials
45 minutes	• Roversa robots • 6x4 3 Little Pigs Grid Mat • House Cards • Materials Cards • Navigator/Driver role cards • Roversa Directional arrow cards

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	Class Slides: Roversa and the Three Little Pigs: An Ordi…

Teaching Strategy

- Modeling and celebrating mistakes (debugging): In Activity 1 and 3, the teacher intentionally creates "bugs"
- Collaborative Pair Programming: This ensures equitable participation.
- Unplugged before Plugged: The lesson begins with a physical retelling of the story using cards on the floor before introducing the Roversa. This provides a low-floor entry point.
- Diverse Entry Points: Activity 2 offers 3 potential levels of challenges, ensuring all students actively engage with the content.
- Metacognition: Encouraging students to reflect on how they solved a problem (metacognition) helps them transfer these skills to other areas, like using a calendar or following a recipe. It reinforces that they are computational thinkers in all parts of their day.

Activity 1: Unplugged Story Sequencing (10 Minutes)

Before touching Roversa, the class will retell the story together. Project an image of the “3 Little Pigs” Grid Mat. Using the mat as a point of reference, draw House Cards and Materials Cards while asking students related questions such as:

- “Which house did the wolf visit 1st?”
- “Where are the 4th sticks located?”

Have students physically identify the correct answers on the mat. Reinforce that their algorithm is correct if they can navigate to the intended square on the grid. If a student makes a mistake, encourage them to “debug” and celebrate the opportunity to try again.

Activity 2: Pair Programming (25 Minutes)

Students work in pairs using the **Navigator/Driver role cards to complete the following challenges. As needed, use the Roversa Navigational arrow cards as a scaffold.**

Challenge 1:

- Navigator draws a House Card (e.g., “2nd house”)

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- The Driver programs Roversa to that spot.
- Navigator and Driver switch roles.

Challenge 2:
- Navigator draws a Material Card (e.g., “3rd bricks”)
- The Driver programs Roversa to that spot.
- Navigator and Driver switch roles.

Challenge 3:
- Navigator draws a House Card and a Material Card (e.g. “1st house, 5th sticks”)
- The Driver programs Roversa to that spot.
- Navigator and Driver switch roles.

Activity 3: The Big Bad Debug & Wrap Up

The teacher sets up a trap! Draw a House Card and a Material Card. Program a sequence for Roversa that leads to the wrong house and/or materials. Students must closely watch the “wrong” sequence, identify where it went off-track, and fix it.

Use the following reflection questions to close the activity:
- **The Calendar Connection:** "Class, when we look at a calendar, we find the **1st** Sunday or the **3rd** Thursday. How is finding the **3rd house** on our mat like finding the **3rd Thursday** on a calendar?"
- **Relative Position:** "If Roversa is at the 2nd house, what is the 'date' or position of the house immediately to its right? How do you know it is the 3rd?"
- **Sequential Logic:** "In our story, the Wolf visits houses in a specific order. On a calendar, do the days happen in a sequence (1st, 2nd, 3rd) or can we jump from the 1st to the 5th without passing the others?"

Assessment Strategy

Standard	Assessment
VA SOL 1.AP.2: The student will plan and implement algorithms that include	Students program a sequence to visit specific ordinal positions on the grid,

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the use of sequence and an event based on a predetermined task. VA SOL 1.AP.3: The student will use the iterative design process to construct, test, and debug algorithms that include sequencing and an event.	thereby creating a successful algorithm.
VA Math SOL 1.MG.3h: The student will demonstrate an understanding of the concept of passage of time (to the nearest hour and half-hour) and the calendar. Identify specific days/dates on a calendar (e.g., What date is Saturday? How many Fridays are in October?).	Students describe the relative position of houses and materials using 1st through 6th.

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