

Precoding Activities for Preschoolers



Learning skills used in coding computers can be fun, engaging, and developmentally appropriate for preschoolers through hands-on activities. Coding, or programming, is the art of giving directions to a computer. Young children can learn precoding skills through games that teach taking and giving directions, turn-taking, communication, and more.

Activity 1: Play simple board games

- Board games can teach about the very beginning of understanding coding. In coding, a human types out a direction to a computer and then the computer responds to it. It is all a part of communication.
- Simple board games, such as Chutes and Ladders, with figures and spaces on a board that players need to move either forward or back, are great ways to practice precoding skills. For example, a child will use the spinner and realize the command is to move forward five spaces. The teacher can make the command very obvious to the small group playing the game. They could ask the group, “Luis got a ‘5’. What does that mean?” and the small group might respond, “Move forward five spaces.” The teacher could model this the first time and allow the children to take turns independently after that.
- Play the game with a small group, paying special attention to turn-taking and highlight moving spaces for each player.

Activity 2: Build Lego structures from instructions

- Building Lego structures from a set of instructions can teach precoding skills such as following directions and problem-solving.
- Give one or more children a Lego set with visual step-by-step directions to build a final project, perhaps a pirate ship or a car or a plane. Start with a project with less than 50–75 pieces. Working together or independently, they can follow the directions on the paper in sequence to accomplish their task.
- If they need help, they can ask for help from an adult or another child in the classroom. If they make an error, they can go back and review the instructions with an adult to see where they went wrong. Retracing your steps to detect errors is a key aspect of coding.

Activity 3: Solve puzzles

Puzzles can teach precoding skills such as problem-solving.

- Select puzzles with a varied number of pieces and difficulty levels for your classroom. You’d be surprised how capable young children are with more challenging puzzles.
- Allow children to work together or independently to solve puzzles in the classroom. Adults may need to model some puzzle strategies at first such as sorting corner and edge pieces out and grouping similar colors together. Adults can show children how to turn puzzle pieces carefully to test whether a piece can fit in an available slot or not.
- Provide challenging puzzles that may need to be completed over several days. Help children set a goal of how much time to spend, or pieces to finish, each day. Real coding projects are often complex and need to be broken down in phases to complete over time.

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