Cambridge LAUNCHPAD

Cambridgeshire STEM in the Early Years

Activity Title:

Programme Grids

Learning Objective / Activity Outcome:

Children will be able to give instructions to a person to move them around a grid to a desired point.

Link to Early Years Framework:

- Listening attentively and respond to what they hear with relevant questions, comments, and actions
- Participate in small group, class, and one-to-one discussions, offering their own ideas, using recently introduced vocabulary
- Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes, and poems when appropriate
- Be confident to try new activities and show independence, resilience, and perseverance in the face of challenge
- Work and play cooperatively and take turns with others
- Negotiate space and obstacles safely, with consideration for themselves and others.

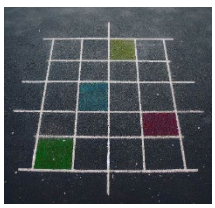
Resources:

- Chalk or masking tape to mark a grid
- Coloured chalk or floor markers,
- Water pistols, soft balls, or bean bags to throw/catch
- An open space.

Starter:

Play a game of 'Simon Says' – focus on physical acts that involve turning, stepping forwards and backwards. Challenges: Use terms 'turn left' and 'turn right'. Try stringing two instructions together – Simon Says step forward then turn.

New Learning:



Mark out a grid on a floor space, outdoors using chalk or indoors using masking tape. Colour in some of the squares, or mark them with cones, floor tiles, or toys – anything that will make it clear that some squares are different.

Demonstrate how to play the game. The adult stands on any empty square within the marked grid. The children then must give them instructions to help them to move from the empty square to a marked square. Once they step onto that square, the children get a playful reward. Be creative with what this is – they could squirt the adult with a water pistol, throw a soft ball at them, pass them a bean bag. Alternatively, the marked squares could have toys that need to be retrieved. Once the square is reached, the child can have that toy to play with.

Model and encourage the use of directional language, adapted to the ability and age of the child. You might accept "turn that way" followed by a gesture in a direction from one child, yet ask for "left, or right?" from a more able/older child. Be understanding about errors – question instructions that may require changing, but also follow the errors, modelling that in programming, a computer will do what it is told even if ultimately it is not going to provide the desired outcome. Challenge the students to give more than one instruction – "Turn left the go forward." Encourage the use of clear, specific instructions – "How many squares should I go forwards?" and so on.

Shared Learning:		
Play the game with the children. Older/more able children could play with a child following the instructions, or with pairs of children giving each other instructions. Monitor the use of clear, specific instructions		
Independent Learning:	**Differentiation:**	
	Support:	**Extension:**
Once confident, children can play the game independently	An adult follows the instructions instead of a child, helping by modelling vocabulary, or offering clearer guidance to the children.	Use verbal prompts to get the children to try to use more precise language or offer short sequences of two or more instructions at a time.
Plenary:		
Discuss with the children how what they have done today is a bit like how a computer works – people give the computer instructions, and the computer follows them. Usually the instructions are right, and the computer does what you want it to, but sometimes they are wrong, and it doesn't work. When the instructions are wrong, we call it a 'bug'.		
Careers in the Curriculum:		
Partner Profile:	NINJA THEORY	
Name:	**Ninja Theory game design studio**	
Web Address:	ninjatheory.com	
Partner Summary:		
(What are the primary activities of the partner? What industry sector are they? Where do they operate? What are key products / outcomes?)		
(What are the main types of jobs available within the partner organisation?) Find out more at ninjatheory.com/careers/opportunities		
(What subjects best reflect Partner activities? Which activities in schools)		