CODING ANIMAL ADAPTATIONS

From Patterns to Programs

1. What does the following block sequence do?

a. The sprite moves first, then speaks
b. The sprite speaks, waits, then moves
c. The sprite waits, then speaks and moves
d. The sprite does nothing

Blocks Sequence

WHEN sprite clicked
SAY 'Hello!'
WAIT 1 second
MOVE 10 steps

2. Which block is best used to make a sprite react to a specific colour?

a. MOVE 10 steps
b. IF touching color [blue]
c. SAY 'Hello!'
d. WAIT 1 second

3. In Scratch Junior, which block starts a sequence when the green flag is clicked?

a. WHEN sprite clicked
b. START on tap
c. START on green flag
d. REPEAT forever

4. What does a loop help you do in coding?

a. Make the sprite disappear
b. Repeat actions
c. Change colours
d. Stop the program

5. You are designing a game where a cat sprite chases a mouse. When the cat touches the mouse, the mouse should say 'Eek!' and disappear. Arrange the following blocks in the correct sequence.

WHEN Sprite touches [cat] - SAY 'Eek!' - HIDE

Blocks Sequence

6. A robot sprite should move forward until it hits a wall (red colour), then turn around. Arrange the Blockly-style blocks using logic:

MOVE 10 steps - REPEAT until touching colour [red] - SAY 'Turning around!' - TURN 180°-

Blocks Sequence

7. The sprite is supposed to say 'Hello!' when clicked, but instead it moves first and then speaks. What's wrong and how would you fix it?

Bug Code

WHEN sprite clicked
MOVE 10 steps
WAIT 1 second
SAY 'Hello!'

Correct Code

8. Imagine you are designing a story animation in Scratch Junior. A bird flies across the screen, lands on a tree, and sings.

Describe the blocks you would use and the sequence.

Blocks Sequence

9. The sequence should create a realistic animation by using movement, wait, and sound blocks in the correct order.

MOVE across screen - START on green flag - WAIT 1 second - STOP movement - SAY 'Tweet tweet!' or play sound

Blocks Sequence

10. Create a mini-algorithm for a sprite that reacts differently based on what it touches. The first one is done for you.

a. If it touches water, it says 'Splash!'

Answer: IF touching color [blue]
SAY 'Splash!'

b. If it touches fire, it says 'Hot!' and changes color

c. If it touches grass, it says 'Soft!'

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Recognition & Recall

1. **What does the block WAIT 1 second do?**
   a. Stops the sprite forever
   b. Delays the next action
   c. Speeds up the sprite
   d. Changes the sprite's color
2. **Which block starts a sequence when the sprite is clicked?**
   a. IF touching color [red]
   b. WHEN sprite clicked
   c. MOVE 10 steps
   d. SAY 'Hello!'
3. **What does a loop block do?**
   a. Runs the code once
   b. Repeats actions
   c. Stops the sprite
   d. Changes the background
4. **Which block is used to make decisions in code?**
   a. MOVE 10 steps
   b. IF touching color [blue]
   c. WAIT 2 seconds
   d. SAY 'Hi!'
5. **You want a sprite to react when it touches a predator. Which sequence is correct?**

A.	B.	C.
MOVE 10 steps SAY 'Ouch!' IF touching sprite [predator]	IF touching sprite [predator] SAY 'Ouch!' MOVE 10 steps	SAY 'Ouch!' MOVE 10 steps IF touching sprite [predator]

6. **A sprite should camouflage when it touches green grass. Which block should come first?**
   a. MOVE 10 steps
   b. CHANGE COLOR effect to [green]
   c. WHEN sprite touches color [green]
   d. SAY 'I blend in!'

7. **Which of these sequences best simulates night vision activation?**

A.	B.
WHEN sprite touches color [black] WAIT 1 second SAY 'Night vision activated!' CHANGE COLOR effect to [glow]'	WHEN sprite touches color [black] CHANGE COLOR effect to [glow] WAIT 1 second SAY 'Night vision activated!'

Debugging & Prediction

8. **The sprite should say 'Ouch!' and move away when touched by a predator. What's wrong with the code? Write the correct sequence of code.**

Bug Code	Correct Code
MOVE 10 steps SAY 'Ouch!' IF touching sprite [predator]	

9. **Predict what happens in this code:**

Bug Code	Correct Code
REPEAT until touching color [red] MOVE 10 steps SAY 'I hit the wall!'	

10. Identify the bug and debug this sequence:

Bug Code

WHEN sprite clicked
SAY 'Hello!'
MOVE 10 steps
WAIT 1 second

Correct Code

11. Design a sequence where a sprite:

- Camouflages in green grass
- Activates night vision in darkness
- Moves forward after each reaction

Blocks Sequence

12. A sprite should:

- Say 'Yum!' when touching food
- Say 'Ouch!' when touching fire
- Say 'Splash!' when touching water

Blocks Sequence

13. Complete this code. A robot sprite should:

- Move forward until it hits a wall (red)
- Turn around
- Activate a warning light

```
REPEAT until touching color [_____]
  MOVE 10 steps
IF touching color [_____]
  _____ 180 degrees
  CHANGE COLOR effect to [red glow]
  _____ 'Obstacle detected!'
```

14. Complete this code. A weather simulation sprite should:

Say 'It's sunny!' when background is yellow
Say 'It's raining!' when background is blue
Say 'It's night!' when background is black

```
IF background color is [yellow]
   SAY 'It's _____!'
IF background color is [_____]
   SAY 'It's raining!'
IF background color is [_____]
   SAY 'It's night!'
```

15. Complete the code for a Scratch Junior-style animation where a character:

- Starts walking when the green flag is clicked
- Stops at a tree
- Says 'I love nature!'
- Changes background to sunset

```
START on _____ flag
_____ forward
WAIT until touching _____
_____ 'I love nature!'
CHANGE background to [_____]
```

16. Design a game mechanic using IF and SAY conditions:

- A sprite collects coins (yellow)
- Avoids lava (red)
- Gets a speed boost when touching blue

Blocks Sequence