New Crab Maze
PARSONS USE MODIFY CREATE Page 1
Start Scratch and load
newcrabmazeparsons

Simple Procedures

Some of the crab sprite code has been left unconnected use the algorithms to connect it together in the right places.

Define **check_keys_for_steering**
If use right arrow key
  Turn 15 degrees to the right
If use the left arrow key
  Turn 15 degrees to the left
	Define **check_end_game**
	If the red colour on the crab is touching pink
	  End everything in the game

Define **send_crab_to_start** Send crab to start using x and y Point down 180 Move backwards 5 steps	Define **check_next_level** if red colour on crab touching green at end Change the backdrop Run **send_crab_to_start** procedure Broadcast come_back_money
Define **do_moving** Move forwards one step	Define **do_crab_animation** Change to the next crab costume Pause for 0.3 second

Main program algorithm

Start with green flag
Go to start backdrop
Go to x163 and y 114 position on screen
Point down 180 degrees
Loop always
  do_moving procedure
  check_keys_for_steering procedure
  check_next_level procedure
  check_end_game procedure

Main program algorithm

Start with green flag
Loop always
  do_crab_animation procedure

Now mark your use work using the PARSONS answer sheet
if you got anything wrong fix it.

Name

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New Crab Maze
PARSONS USE MODIFY CREATE Page 2
Start Scratch and load
newcrabmaze

Simple Procedures

USE the code (Run the programs lots of times but don't change the code)
Look at the code inside the crab sprite only
Crab Sprite Questions
1, How many procedures are there? *HINT start with define, curved at top*

2, How many blocks start/run a procedure *HINT Name of procedure without define or curved top*

3, Which procedure is only started/run when the colour red is touching the colour green?

4, How many procedures are inside continuous indefinite (forever) loops?

5, Name two **condition-starts-action** (if then) that are checked continuously throughout the program?

6, Name three blocks that are initialisation (designed to set the program back to how it looked and ran when it was first run).

Look at the code inside the money sprite only
Money Sprite Questions
7, How many procedures are there? *HINT start with define, curved at top*

8, Which code block sets **how many** money clones are created?

9, Which **condition-starts-action** are checked continuously within a loop?

10, What causes a money clone to be deleted?

11, Look at all the blocks that start the procedures in the money sprite which order do they first run in? Number them 1,2,3 in the order they are run or checked.
check_hit_by_crab,
check_not_on_walls_or_end,
make_lots of clones

Now mark your use work using the USE answer sheet

Name

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New Crab Maze
PARSONS USE MODIFY CREATE Page 3

Simple Procedures

MODIFY (Run the code and make small changes)

Crab Modify Challenges
1, Can you make the crab move faster? What did you change?

2, Can you make the crab change costumes slower? What did you change?

3, The **do_crab_animation** procedure is started/run from inside a separate continuous (forever) loop. Why do you think this it is inside its own forever loop? Try putting the **do_crab_animation** start/run block inside the forever loop which starts/runs four other procedures.

Money Modify Challenges
4, Can you make 40 money sprites appear for each level? What did you change?

5, Can you make the score increase by 10 points every time a money clone touches the crab? What did you change?

6, In your own words explain what the **check_not_on_walls_or_end** procedure does? Try playing the program after disconnecting the block to see how the program runs without it.

Now mark the **modify** questions using the answer sheet

Modify More Challenges
1, Change the **check_keys_for_steering** procedure so that one key turns either right or left. What did you change?

2, Change the **check_end_game** procedure so that when the red of the crab touches the pink wall it goes back to the start. What did you change?

Now mark the **modify more** questions using the answer sheet

Name

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New Crab Maze
PARSONS USE MODIFY CREATE Page 4

Simple Procedures

CREATE INSIDE (Create additions to newcrabmaze)
Complete two or more of the challenges. Tick the challenges you have completed or fill in the box at the bottom to explain your own.

Player Vs Player PVP Game
Duplicate the crab (right click on the crab sprite and select duplicate)
Adapt the game so that the new crab has to catch the old crab to end the game. Change the code so the new crab can steer using different keys and is a different colour. Change the code so the new crab starts is hidden for so many seconds after the red crab starts. Can you make a new procedure to make the new crab pass through the pink walls very slowly and not end the game when it touches the walls. ☐

More Money
Duplicate the money sprite
Change the colour. Change the code so that the new sprite appears anywhere apart from the end green colour. Change the score when it touches a crab to 50. Make the More Money clone hide and reveal itself randomly. ☐

Moving Pink Obstacles
Create new pink shape sprites. Code these so they glide slowly from one area to another continuously or rotate slowly. What will they do then they meet the crab(s)?

☐

My Modification
Create your own modification to improve the game and say what it did underneath.

For extra hints see the create inside hints sheets or ask your teacher

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New Crab Maze
PARSONS USE MODIFY CREATE Page 5
You can share design ideas but must plan and code separately

Simple Procedures

CREATE NEW
Design and code your own game that uses **procedures**.
You can adapt any ideas from any other games you have studied.

Idea Level *My game will… My characters will be… The aim of the game will be….*

Design Level (Draw your game simply and name each procedure and what it will do)

Write **procedure** algorithms that you might need near your design drawings.

Initialisation Jot down how your sprites will always start in the same place

Name

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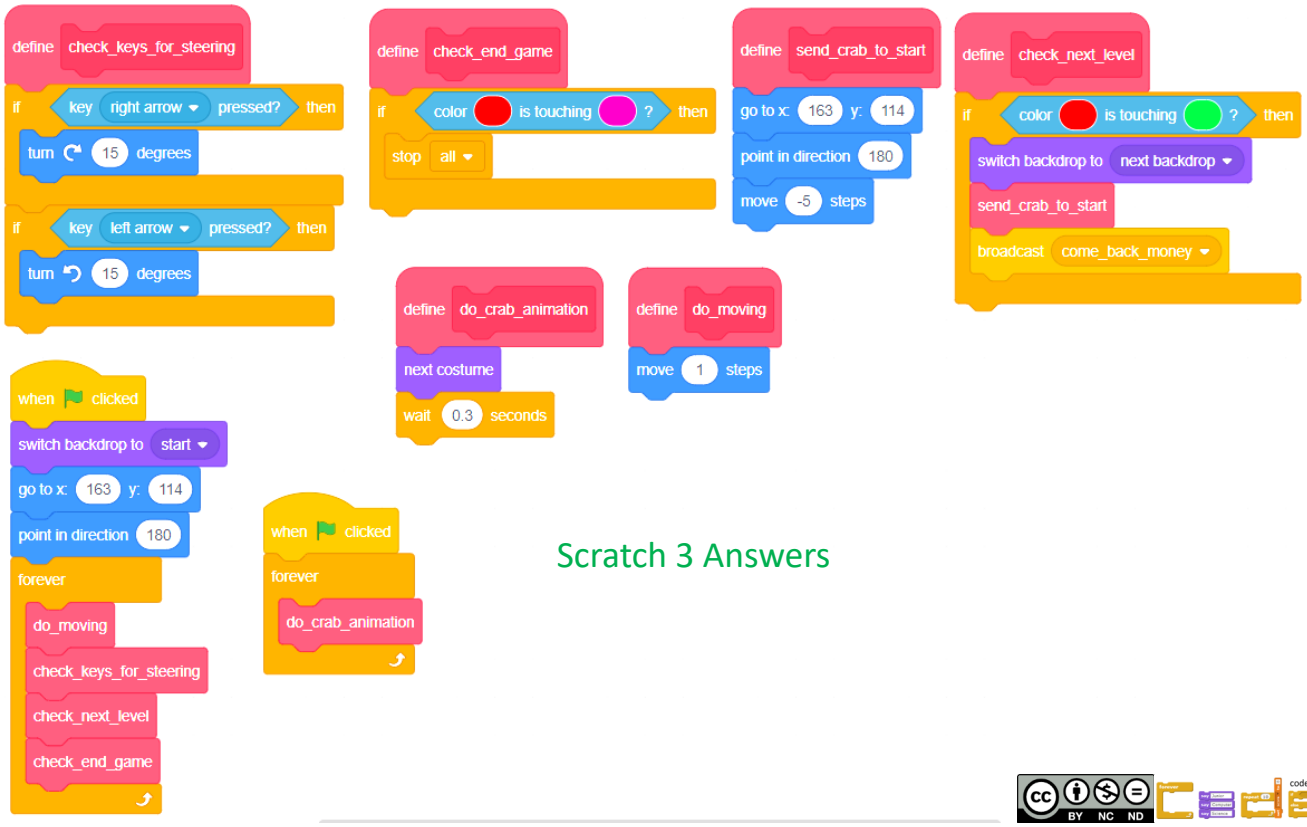
New Crab Maze
PARSONS ANSWERS



Scratch 3 Answers

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New Crab Maze PARSONS ANSWERS

Scratch 2 Answers

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New Crab Maze
PARSONS USE ANSWERS

Simple Procedures

USE ANSWERS

Crab Sprite Questions

1, How many procedures are there? *HINT start with define, curved at top*
6 (1 mark)
2, How many blocks start/run a procedure *HINT Name of procedure without define or curved top*
6 (1 mark)
3, Which procedure is only started/run when the colour red is touching the colour green?
send_crab_to_start (1 mark)
4, How many procedures are inside continuous indefinite (forever) loops?
5 (1 mark) if you put 6 because you counted the send_crab_to_start as inside another procedure that is within a continuous loop then also have 1 mark
5, Name two **condition-starts-action** (if then) that are checked continuously throughout the program?
Any two from if key right arrow pressed, if key left arrow pressed, if colour red is touching pink, if colour red is touching green (1 mark, if you have described them by what they do such as steer right that is fine)
6, Name three blocks that are initialisation (designed to set the program back to how it looked and ran when it was first run).
Switch backdrop to start, go to x163 and y114, point in direction 180 (1 mark)

Money Sprite Questions

7, How many procedures are there? *HINT start with define, curved at top*
3 (1 mark)
8, Which code block sets **how many** money clones are created?
Repeat 20 (1 mark)
9, Which **condition-starts-action** are checked continuously within a loop?
If touching crab, if touching pink or green (1 mark for each, 2 marks total)
10, What causes a money clone to be deleted?
If it touches the crab sprite, no mark for the delete the clone block without saying that it touches the crab sprite (1 mark)
11, Look at all the blocks that start the procedures in the money sprite which order do they first run in? Number them 1,2,3 in the order they are run or checked.
check_hit_by_crab, 2
check_not_on_walls_or_end, 3
make_lots of clones 1
(1 mark for all three in the correct order)

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New Crab Maze
PARSONS MODIFY ANSWERS

Simple Procedures

MODIFY (Run the code and make small changes)

Crab Modify Challenges

1, Can you make the crab move faster? What did you change?
Change move 1 step to a higher number (1 mark)
2, Can you make the crab change costumes slower? What did you change?
Change wait 0.3 secs to a higher number (1 mark)
3, The **do_crab_animation** procedure is started/run from inside a separate continuous (forever) loop. Why do you think this it is inside its own forever loop? Try putting the **do_crab_animation** start/run block inside the forever loop which starts/runs four other procedures.
The wait block slows the forever loop down which slows all the other procedures making the game run very slowly (1 mark)

Money Modify Challenges

4, Can you make 40 money sprites appear for each level? What did you change?
Change repeat 20 to repeat 40 (1 mark)
5, Can you make the score increase by 10 points every time a money clone touches the crab? What did you change?
Modify change score by 1 to change score by 10 (1 mark)
6, In your own words explain what the **check_not_on_walls_or_end** procedure does? Try playing the program after disconnecting the block to see how the program runs without it.
Makes sure the money sprites don't appear touching the walls or green end sprite (1 mark)

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New Crab Maze
MODIFY MORE ANSWERS

Simple Procedures

Modify More Challenges

1, Change the **check_keys_for_steering** procedure so that one key turns either right or left. What did you change?
Change two if then blocks to just one if else condition-switches-between-actions block (1 mark)
2, Change the **check_end_game** procedure so that when the red of the crab touches the pink wall it goes back to the start. What did you change?
Remove stop all and replace with either **send_crab_to_start** or go to x 163 and y 114 block (1 mark)

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New Crab Maze
PARSONS CREATE INSIDE HINT SHEET

Simple Procedures

Player Vs Player PVP Game
Duplicate the crab (right click on the crab sprite and select duplicate)
Adapt the game so that the new crab has to catch the old crab to end the game. HINT if touching Change the code so the new crab can steer using different keys HINT if key x and is a different colour HINT costume editing. Change the code so the new crab starts is hidden for so many seconds after the red crab starts HINT Wait. Can you make a new procedure to make the new crab pass through the pink walls very slowly and not end the game when it touches the walls HINT Move minus steps.

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New Crab Maze
PARSONS CREATE INSIDE HINT SHEET

Simple Procedures

More Money
Duplicate the money sprite
Change the colour HINT costume colouring. Change the code so that the new sprite appears anywhere apart from the end green colour HINT if touching pink only. Change the score when it touches a crab to 50 HINT change score by. Make the More Money clone hide and reveal itself randomly HINT hide and show.

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New Crab Maze
PARSONS CREATE INSIDE HINT SHEET

Simple Procedures

Moving Pink Obstacles
Create new pink shape sprites HINT costume. Code these so they glide slowly from one area to another continuously or rotate slowly HINT continuous loop glide to. What will they do then they meet the crab(s)? HINT if touching

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