



Lesson 1 | Warmup

This is a Pixel Bots exercise. In Pixel Bots we will program bots to paint pictures using Code Elements.

Code Elements



Problem 1

Pixel Bot Read Code: You are a pixel bot. Read the code and paint the picture.





Lesson 1 | Worksheet 1

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Example



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| 3 | 🎨 |

Problems

You are a pixel bot. Read the code and paint the picture.



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| 3 | 🎨 |
| 4 | ↑ |



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| 4 | 🎨 |





Lesson 1 | Worksheet 1 (cont'd)



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Lesson 10 | Warm-up

This is a Pixel Bots JavaScript exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements

up() down()
left() right()
paint()

Problems

You are a coder. On the code line paper, write code to command the pixel bot to paint the picture.



{ } Lesson 10 | Worksheet 1



1) This is a drill. A drill creates holes by spinning a drill bit. How would you create a bigger hole with a drill bit? Be creative.



2) This is a golfer. A golfer hits a golf ball with a golf club. How would the golfer hit the ball further? Be creative.



Lesson 10| Worksheet 1 (cont'd)

Now try programming the drill to create 3 different size holes using one coding element.

Code Elements

`drill(size)`



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Program the golfer to hit the ball 3 different distances.

Code Elements

`swing(club)`



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Lesson 10 | Worksheet 1 (cont'd)

5) Now it's time to return to Pixel Bot. Can you come up with a way to paint the picture in 6 lines? Think about problems 3 and 4.



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6) What are the similarities between drilling, golf, and moving the pixel bot multiple steps?



Lesson 10 | Worksheet 2

This is an online Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Problems

You are a coder. Write code to command the pixel bot to paint the pictures.



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained





Lesson 11 | Worksheet

This is an online Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Problems

You are a coder. Write code to command the pixel bot to paint the pictures.



☐ done
☐ explained



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Lesson 11 | Exit Ticket

This is an online Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Problems

You are a coder. Write code to command the pixel bot to paint the picture.



Code Link





Lesson 12 | Exit Ticket

Match the artist with the blocks of code that complete the shape he is drawing.



```
move forward ▼ by 100 pixels  
turn right ▼ by 120 degrees  
move forward ▼ by 100 pixels
```

```
move forward ▼ by 100 pixels  
turn right ▼ by 90 degrees  
move forward ▼ by 100 pixels
```

```
move forward ▼ by 100 pixels  
turn right ▼ by 60 degrees  
move forward ▼ by 100 pixels
```

```
turn right ▼ by 120 degrees  
move forward ▼ by 100 pixels
```





Lesson 2 | Warmup

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Example



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|---|---|
| 1 | → |
| 2 | ☑ |
| 3 | ↑ |
| 4 | ↑ |
| 5 | ☑ |

Problems

You are a pixel bot. Read the code and paint the picture.



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| 1 | ↑ |
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| 3 | ☑ |
| 4 | ↑ |
| 5 | → |
| 6 | ☑ |
| 7 | ↓ |
| 8 | ↓ |
| 9 | ☑ |





Lesson 2 | Worksheet 1

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 3 | Warmup

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 3 | Worksheet 1

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 3 | Worksheet 2

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 3 | Worksheet 3

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 3 | Worksheet 4

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 3 | Exit Ticket

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 4 | Worksheet 1

This is an online Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Problems

You are a coder. Write code to command the pixel bot to paint the pictures.



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained





Lesson 4 | Exit Ticket

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 6 | Warmup

This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 6 | Worksheet 1

This is a Pixel Bots JavaScript exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements

up() down()
left() right()
paint()

Problem

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 6 | Worksheet 2

This is a Dance Bot exercise. In Dance Bot we program bots to dance.

Code Elements

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| <code>up()</code> | <code>down()</code> |
| <code>left()</code> | <code>right()</code> |
| <code>spinLeft()</code> | <code>spinRight()</code> |
| <code>wait()</code> | |

Problem

You are a coder. Write code to command your bot to perform the same dance your teacher is doing.

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Lesson 7 | Worksheet 1

This is an online Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Problems

You are a coder. Write code to command the pixel bot to paint the pictures.



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained





Lesson 7 | Worksheet 2

This is an online Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Problems

You are a coder. Write code to command the pixel bot to paint the pictures.



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained





Lesson 7 | Exit Ticket

This is a Pixel Bots JavaScript exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements

up() down()
left() right()
paint()

Problems

1) Which of the following has a syntax error:

- a. up()
- b. down()
- c. right)
- d. left()

2) You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 8 | Warm-up

This is a Pixel Bots JavaScript exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements

up() down()
left() right()
paint()

Problems

You are a coder. Write code to command the pixel bot to paint the picture.



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Lesson 8 | Exit Ticket

This is a Mouse Bot JavaScript exercise. In Mouse Bot we program the bot to eat the cheese.

Code Elements

faceUp() move()
faceRight() getCheese()

Problems

You are a coder. Assuming the Mouse Bot starts at the star facing the right, write code to get the cheese.



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Lesson 9 | Warm Up

This is a Mouse Bot JavaScript exercise. In Mouse Bot we program the bot to eat the cheese.

Code Elements

faceUp()
faceRight()
move()
getCheese()

Problems

You are a coder. Assuming the Mouse Bot starts at the star facing the right, write code to get the cheese.



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Coders & Bots

Coders



Navigator: You are responsible for the overall plan for the program. Guide the Writer and keep track of what your program is doing.



Writer: Add code to your program. Pay attention to syntax.

Bots



Stepper: Step through the program and read each step aloud. Keep your finger on the step you are reading.



Actor: Listen carefully to each line of code the Stepper says aloud. Using the materials available, show what each line of code does.

Coding Paper

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Coding Paper

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Coding Paper

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| 19 | | 49 | | 79 | |
| 20 | | 50 | | 80 | |
| 21 | | 51 | | 81 | |
| 22 | | 52 | | 82 | |
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| 24 | | 54 | | 84 | |
| 25 | | 55 | | 85 | |
| 26 | | 56 | | 86 | |
| 27 | | 57 | | 87 | |
| 28 | | 58 | | 88 | |
| 29 | | 59 | | 89 | |
| 30 | | 60 | | 90 | |



Small Pixel Grids





Medium Pixel Grids





Large Pixel Grids





Challenge Problems - 1





Challenge Problems - 2

