



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



1	↑
2	→
3	🎨

Problems

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



1	→
2	→
3	🎨
4	↑



1	→
2	🎨
3	↑
4	🎨





Lesson 1 | Worksheet 1 (cont'd)



1	↓
2	↖
3	←
4	↗



1	↖
2	←
3	↖
4	↓
5	↗



1	↖
2	↑
3	↖
4	↑
5	↖





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)`



1	
2	
3	
4	
5	
6	

Program the golfer to hit the ball 3 different distances.

Code Elements

`swing(club)`



1	
2	
3	
4	
5	
6	



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.



1	
2	
3	
4	
5	
6	

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



☐ done
☐ explained



☐ done
☐ explained



☐ done
☐ explained



☐ done
☐ explained



☐ done
☐ explained



☐ done
☐ explained



☐ done
☐ explained



☐ done
☐ explained



☐ done
☐ explained



☐ done
☐ explained



☐ done
☐ explained





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



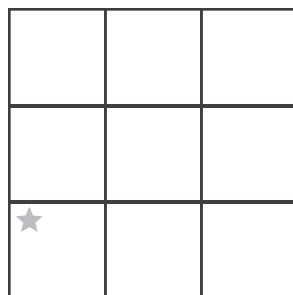
Example



1	→
2	↗
3	↑
4	↑
5	↗

Problems

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



1	↑
2	→
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.



1	
2	
3	
4	
5	
6	





Lesson 3 | Warmup

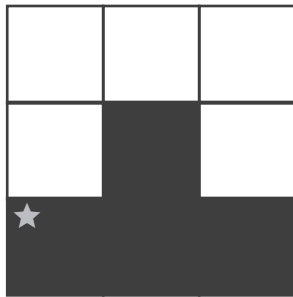
This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

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



1	
2	
3	
4	
5	
6	
7	
8	
9	
10	





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.



1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

11	
12	
13	
14	
15	
16	
17	
18	
19	
20	





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.



1
2
3
4
5
6
7
8
9
10

11
12
13
14
15
16
17
18
19
20





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.



1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

11	
12	
13	
14	
15	
16	
17	
18	
19	
20	





Lesson 3 | Worksheet 4

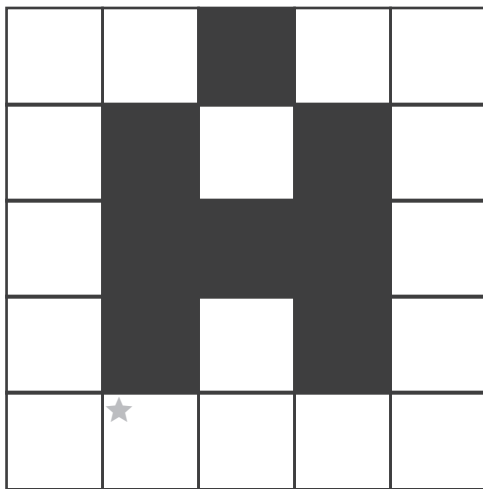
This is a Pixel Bots exercise. In Pixel Bots we program bots to paint pictures using Code Elements.

Code Elements



Problem

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



1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

11	
12	
13	
14	
15	
16	
17	
18	
19	
20	





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.



1
2
3
4
5
6
7
8
9
10

11
12
13
14
15
16
17
18
19
20





Lesson 4 | Worksheet 1

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

Problems

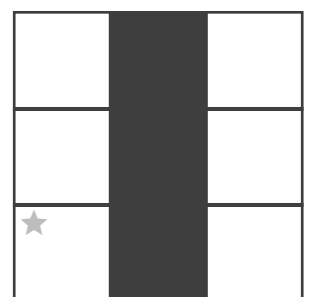
You are a coder. Write code to command the pixel bot to paint the pictures.



- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



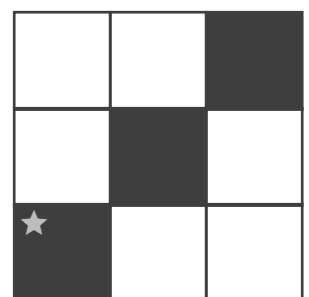
- ☐ done
- ☐ explained



- ☐ done
- ☐ explained



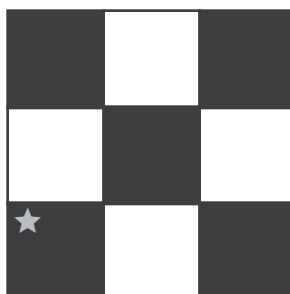
- ☐ done
- ☐ explained



- ☐ 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.



1
2
3
4
5
6

7
8
9
10
11
12



1
2
3
4
5
6

7
8
9
10
11
12





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.



1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	





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.



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

16
17
18
19
20
21
22
23
24
25
26
27
28
29
30





Lesson 6 | Worksheet 2

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

Code Elements

<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.

1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	



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.



1	
2	
3	
4	
5	
6	
7	
8	
9	





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.



1	
2	
3	
4	
5	
6	
7	
8	
9	
10	





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.



1
2
3
4
5
6
7
8





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.



1	
2	
3	
4	
5	
6	
7	
8	
9	
10	





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

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

11	
12	
13	
14	
15	
16	
17	
18	
19	
20	



Coding Paper

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	



Coding Paper

1		31		61	
2		32		62	
3		33		63	
4		34		64	
5		35		65	
6		36		66	
7		37		67	
8		38		68	
9		39		69	
10		40		70	
11		41		71	
12		42		72	
13		43		73	
14		44		74	
15		45		75	
16		46		76	
17		47		77	
18		48		78	
19		49		79	
20		50		80	
21		51		81	
22		52		82	
23		53		83	
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

