



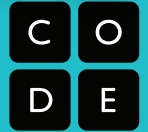
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Name: _____

Teacher Key

Algorithms

Tangrams Assessment Worksheet



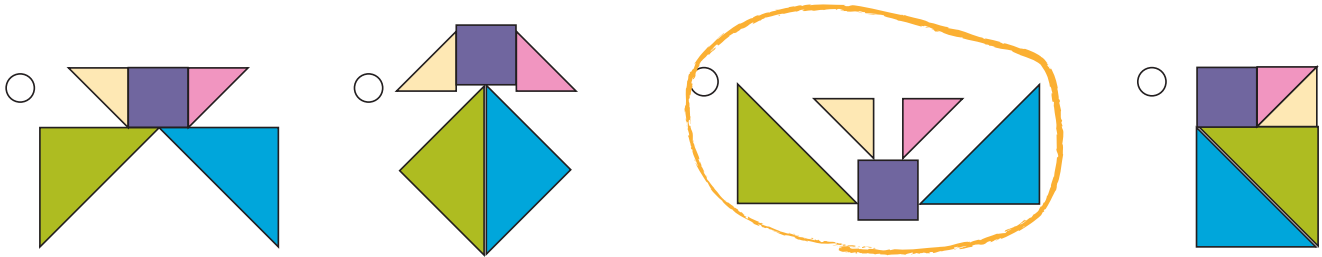
Very specific algorithms help multiple people create identical products.

Less specific algorithms allow a great deal of flexibility for every person to have something different.

Circle the drawing that does not follow the algorithm provided.

Algorithm #1

- 1) Put two large triangles at the bottom of the image.
- 2) Put a square on top of those two triangles.
- 3) Put two little triangles beside the square.



Circle the algorithm that goes with Drawing 1.

Algorithm A

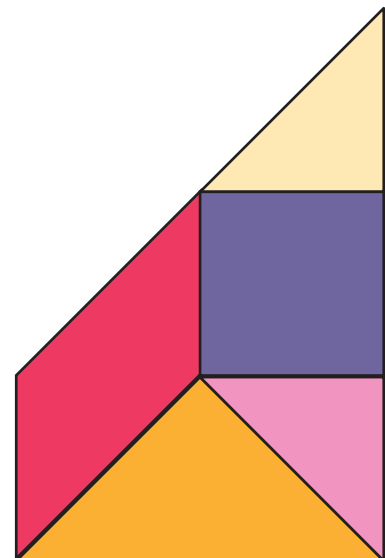
- 1) Use two triangles, a square, and another piece
- 2) Line two triangles up with the square
- 3) Put the last piece on top of the square

Algorithm B

- 1) Use three triangles, a rhombus, and another piece
- 2) Put the rhombus at the bottom
- 3) Put all three triangles above the rhombus
- 4) Put the final piece to the left of everything else

Algorithm C

- 1) Use three triangles, a square, and another piece
- 2) Line two triangles up with the square
- 3) Put a third triangle beneath the other shapes
- 4) Put the last piece on the left



Drawing 1



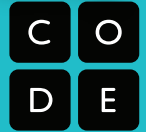
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Name: _____

Teacher Key

Variables in Envelopes

Robot Variables Worksheet



Think about a robot. What is it supposed to do? What does it look like?

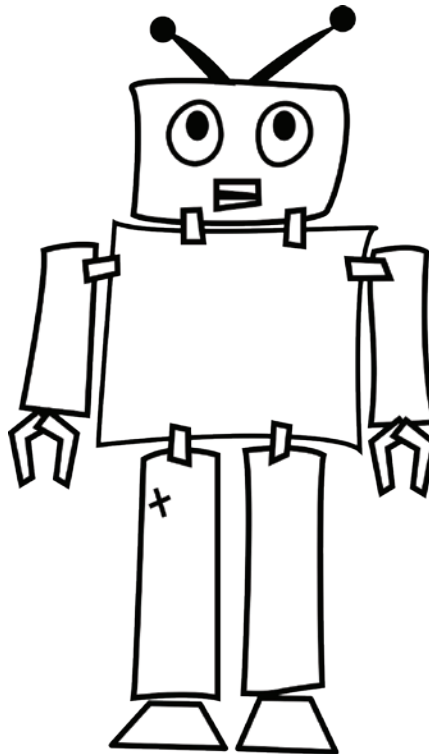
Draw your robot on paper. When you're done, answer the three questions below on separate pieces of paper, then put them in the correct envelopes.

robotName

numUnitsTall

purpose

Example



1. My robot's name is Elijah.

robotName = Elijah

2. My robot's height is 27 feet (don't forget units!).

numUnitsTall = 27 feet

3. My robot's primary purpose is being awesome.

purpose = being awesome



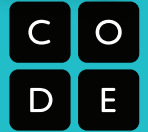
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Teacher Key

Variables in Envelopes

Variables Assessment Worksheet



Given the value of each variable envelope, fill-in the blanks to finish the sentence.

color

 = pink

petalNumber

 = 22

animal

 = monkey

bestSport

 = golf

hobby

 = coding

When I grow up, I want to own a guard monkey
animal

I found a flower with 22 petals, so I
picked it.
petalNumber

My dad just painted his house pink to
match his car.
color

I love coding. I do it every evening.
hobby

There is no such thing as a pink river, so if you find
one, don't swim in it!
color

The best sport in the world is golf, do
you agree?
bestSport

Variable envelopes can also contain number values. Use these envelopes and the provided equations to figure out the magic numbers below.

numOne

 = 2

numTwo

 = 5

numThree

 = 7

$$\boxed{5} = \frac{7}{\text{numThree}} - \frac{2}{\text{numOne}}$$

magicNumberA

$$\boxed{10} = \frac{5}{\text{numTwo}} \times \frac{2}{\text{numOne}}$$

magicNumberB

$$\boxed{52} = \frac{2}{\text{numOne}} + \frac{5}{\text{numTwo}} \times \frac{10}{\text{magicNumberB}}$$

magicNumberC



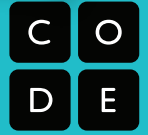
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Name: _____

Teacher Key

Mad Glibs

Abstraction Assessment Worksheet



The Mad Glib template that we used to make these stories has vanished! Look at the stories and figure out which words are supposed to be blanks, then recreate the template at the bottom of the page.

Story 1

Early last year, my mom gave me an old skateboard. She told me about the days when she would ride it from her school in her hometown. I tried to ride it once, but tripped over my shoelaces. It didn't take long before I decided that it was best to leave the skateboarding to my mom.

Story 2

Sometime last year, my mom told me an old story. She told me about the days when she would hear it from her father in her childhood. I tried to tell it once, but tripped over my words. It didn't take long before I decided that it was best to leave the storytelling to my mom.

Create new template here:

Just last year, my mom showed me an old computer. She told me about the days when she would program it to draw circles. I tried to use it once, but tripped over my fingers. It didn't take long before I decided that it was best to leave the old machine to my mom.



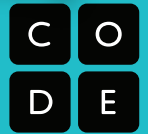
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Name: _____

Teacher Key

Mad Glibs

Abstraction Worksheet



Write a story using the Mad Glibs template below. Fill in the blanks with words to create something fun to share. Then, create a second story by writing another version on the lines at the bottom of the page.

Story 1 Example:

First you take your bread then add a layer of butter
before you pour on a hearty dose of jelly.
Next, press some chips down into the bread before
covering with a sprinkle of pepper.
That's how we make a sandwich !

Story 2 Example:

First, take your planter, then add a layer
of soil before you pour on a hearty dose of
water. Next, press some seeds down into the
soil before covering with a sprinkle of moss.
That's how we make a flower!



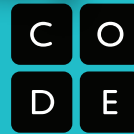
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Name: _____

Teacher Key

For Loop Fun

Sample Game Sheet



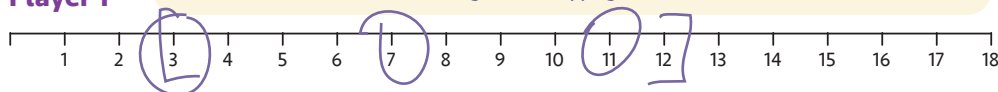
Directions:

- * Use the number lines to trace the "for loop" for each turn
 - * Start at the starting value of X
 - * Count down the number line, circling the numbers at the correct interval
 - * Stop when you get to the stopping value
- * Add all of the circled values to get the score for your round
- * Best 2 out of 3 Wins

ROUND 1

Player 1

For values of X from 3 to 12 incrementing by 4
starting value stopping value interval

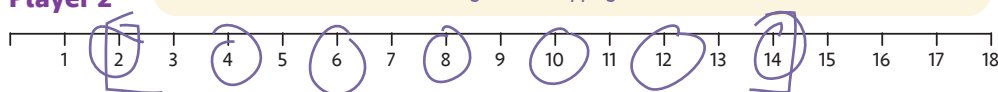


SCORE

21

Player 2

For values of X from 2 to 14 incrementing by 2
starting value stopping value interval

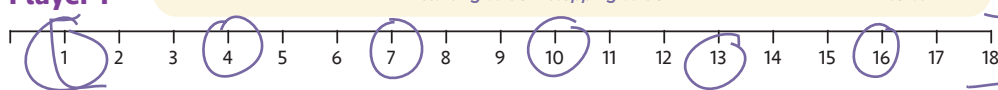


56

ROUND 2

Player 1

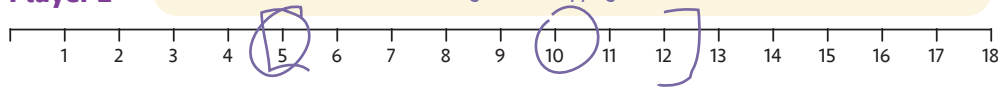
For values of X from 1 to 18 incrementing by 3
starting value stopping value interval



51

Player 2

For values of X from 5 to 12 incrementing by 5
starting value stopping value interval

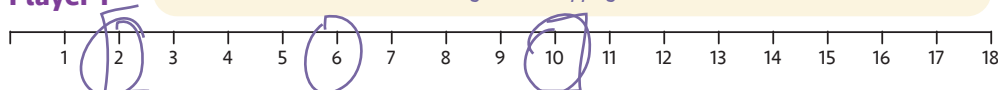


15

ROUND 3

Player 1

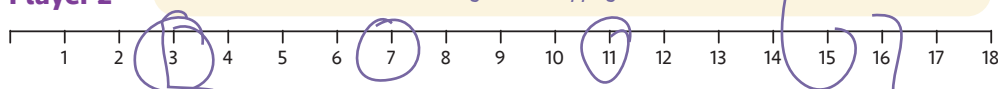
For values of X from 2 to 10 incrementing by 4
starting value stopping value interval



18

Player 2

For values of X from 3 to 16 incrementing by 4
starting value stopping value interval



36



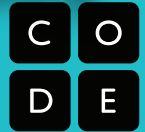
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Name: _____

Teacher Key

For Loop Fun

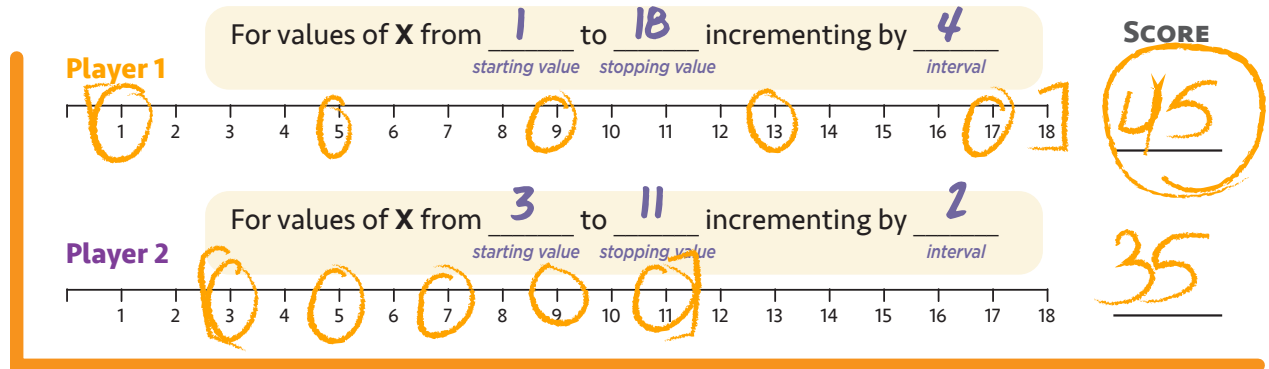
Assessment Worksheet



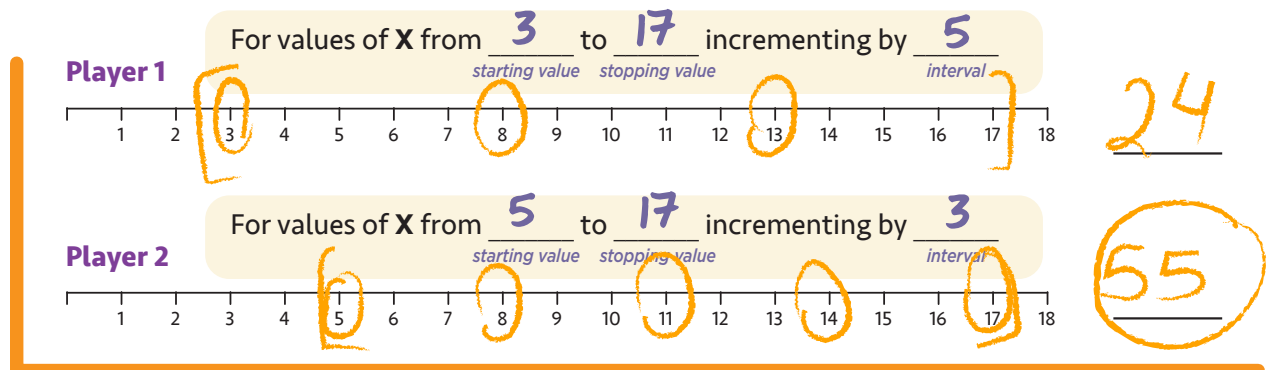
Below, you will find three rounds of the For Loop Game, along with what each player rolled during their turn. Fill out the number lines and tally the scores for each round.

Who won the game?

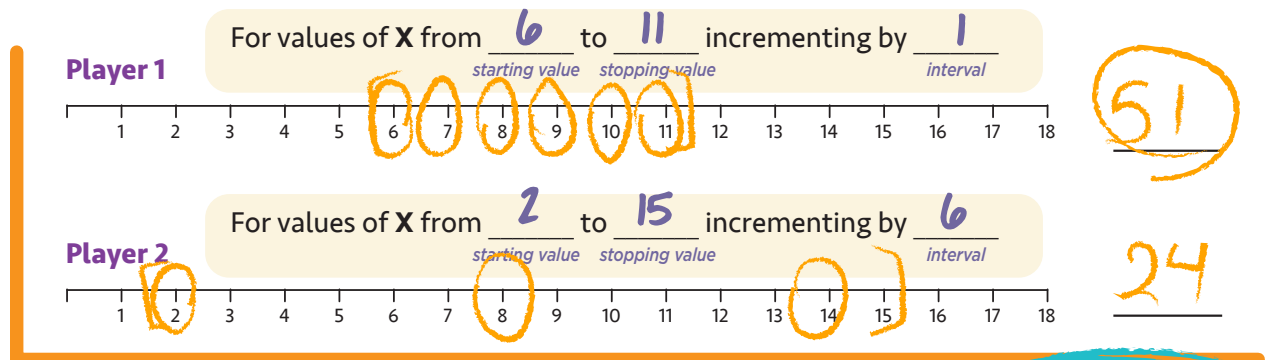
ROUND 1



ROUND 2



ROUND 3



Directions:

- * Use the number lines to trace the “for loop” for each turn
 - * Start by circling the number at the starting value of X
 - * Count down the number line, circling the numbers at the correct interval
 - * Stop when you get to the stopping value
- * Add all of the circled values to get the score for your round
- * Best 2 out of 3 Wins

WHO WON?
PLAYER # 1



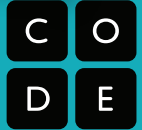
Unplugged

Group Name: _____

Teacher Key

Songwriting Worksheet Example

Using Lyrics to Explain Functions and Procedures



Song Name: *Old MacDonald*

Chorus:

*Old MacDonald had a farm
e-i-e-i-o
And on that farm he had a P1
e-i-e-i-o
With a P2 here and a P2 there
Here a P2, there a P2
Everywhere a P2, P2*

Parameter
Examples:

Animal Name
(P1)

Sound
(P2)

(P3)

Song:

*Chorus(Cow, Moo)
Chorus(Pig, Oink)
Chorus(Horse, Neeeeigh)
Old MacDonald had a farm
eeeeeeee-iiiiiiiiii
eeeeeeee-iiiiiiiiii
ohhhhhhhhhhhhhh!*



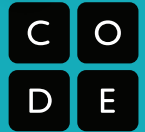
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Name: _____

Teacher Key

Songwriting Worksheet

Lesson 8 Assessment - Finding the Function in a Song



Song Name: *Where is Thumbkin?*

Chorus:

*Where is P1?
Where is P1?
Here I am!
Here I am!
How are you today, sir?
Very well, I thank you.
Run away.
Run away.*

Parameter
Examples:

Finger
(P1)

(P2)

(P3)

Song:

chorus (Thumbkin)

chorus (Pointer)


chorus (Middleman)

chorus (Ringman)

chorus (Pinkie)

Binary Images

Binary Representation Activity



Match the image to the binary code that describes it. In order to get the images correct, you will need to figure out the binary alphabet for each encoding.

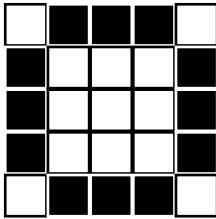


image #1

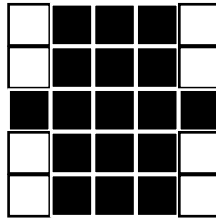


image #2

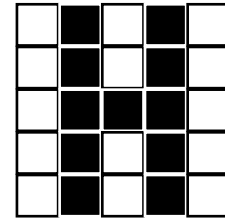


image #3



A) ★ × × × ★ ★ × × × ★ × × × × × ★ × × × ★ ★ × × × ★

x = 0 **★** = 1 This encodes image # 2

B)

○ = 1 ● = 0 This encodes image # 1

C)

 = 0
  = 1
 This encodes image # 3

How do you know that your answers are correct?

All of the corners are white, so those tell us what is 1.

After that, all you have to do is match the pattern in

each code to the pattern of each image when you spell

it out line by line.