



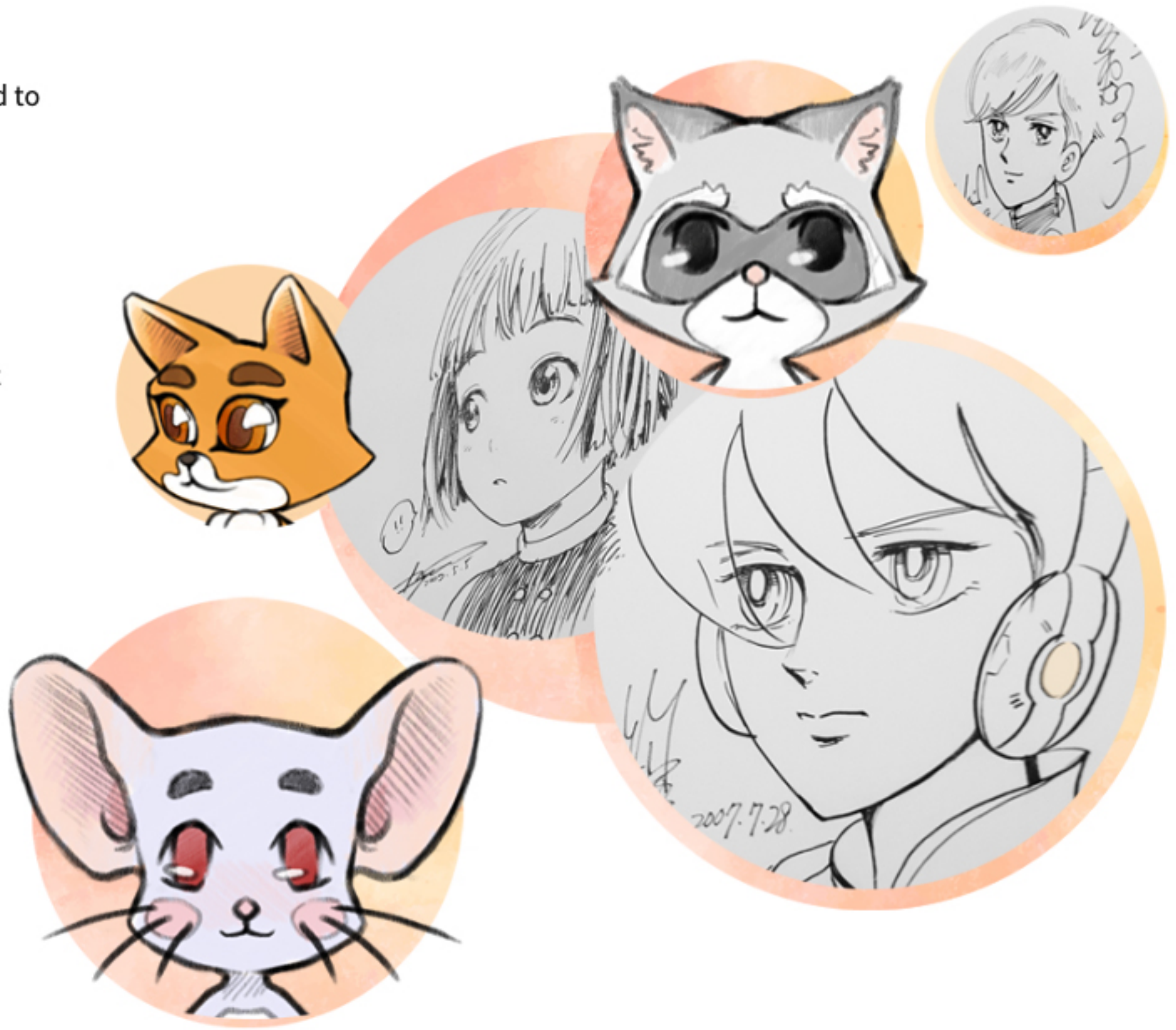
Ms. Medley

Hello! Welcome to the Introduction to Manga class.

I am your teacher, Ms. Medley. I am excited to have you in my class this semester while you are studying here in Tokyo.

Manga is an art form that began in Japan. It is used in comics and cartooning. Manga characters often have a very distinctive and recognizable style. We will learn about that style during this class.

Select **Next** to continue.



**NEXT** >



Ms. Medley

Your project for the class consists of two parts.

1. Create a character using guidelines that I will provide.
2. Use the character to create a one-page storyboard.

Let's get started!



NEXT >



Ms. Medley

Our first Manga character is a raccoon. Let's use graph paper to determine the ratios between its body parts.

- Head
- Torso
- Legs

What are the ratios of the body parts for the raccoon?

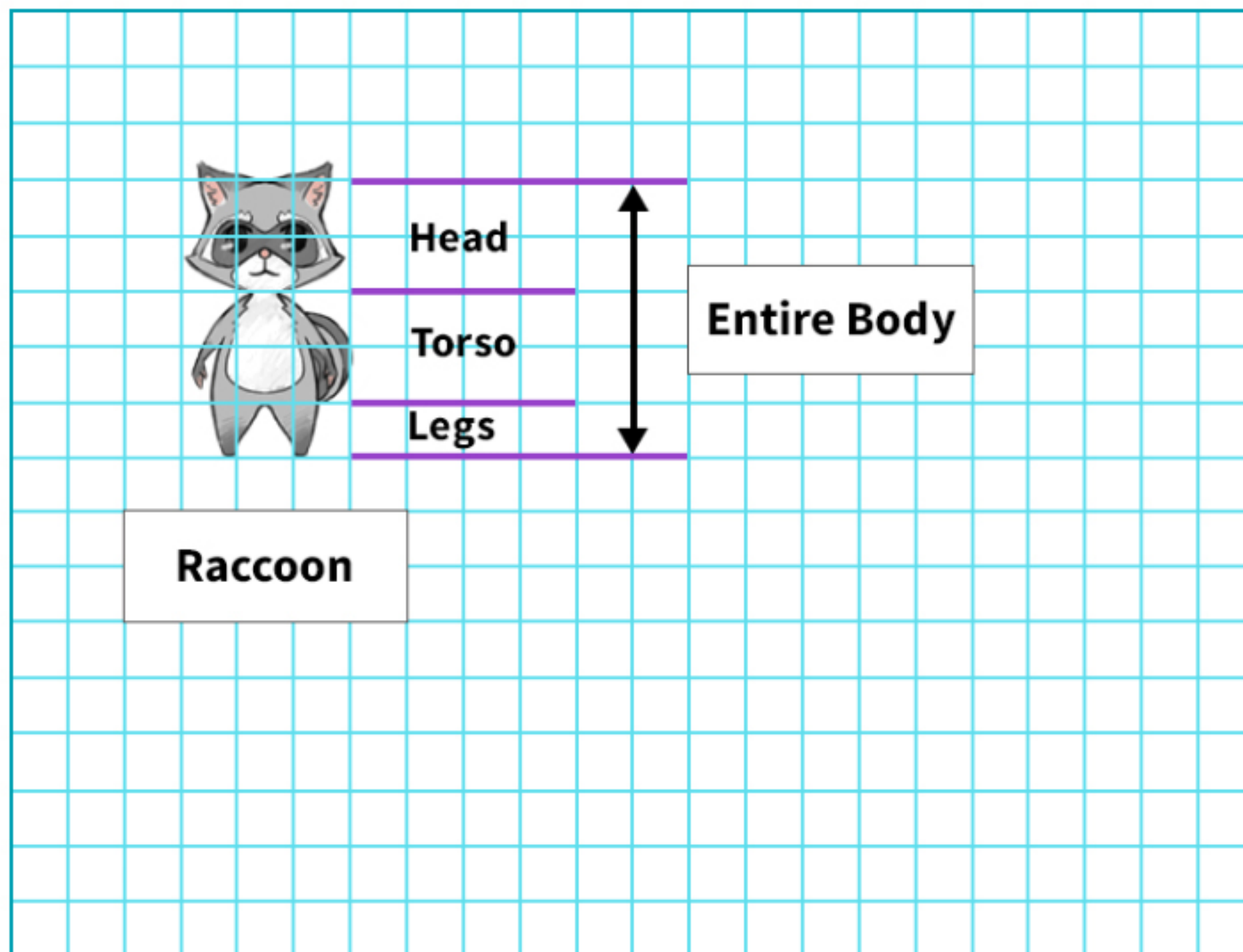
Move a ratio into each box.

0:0   0:0   0:0

0:0   0:0   0:0

Body Parts	Ratio
Head to torso	<input type="text"/>
Torso to legs	<input type="text"/>
Head to entire body	<input type="text"/>
Legs to entire body	<input type="text"/>

### Graph Paper





Ms. Medley

Let's analyze another character.

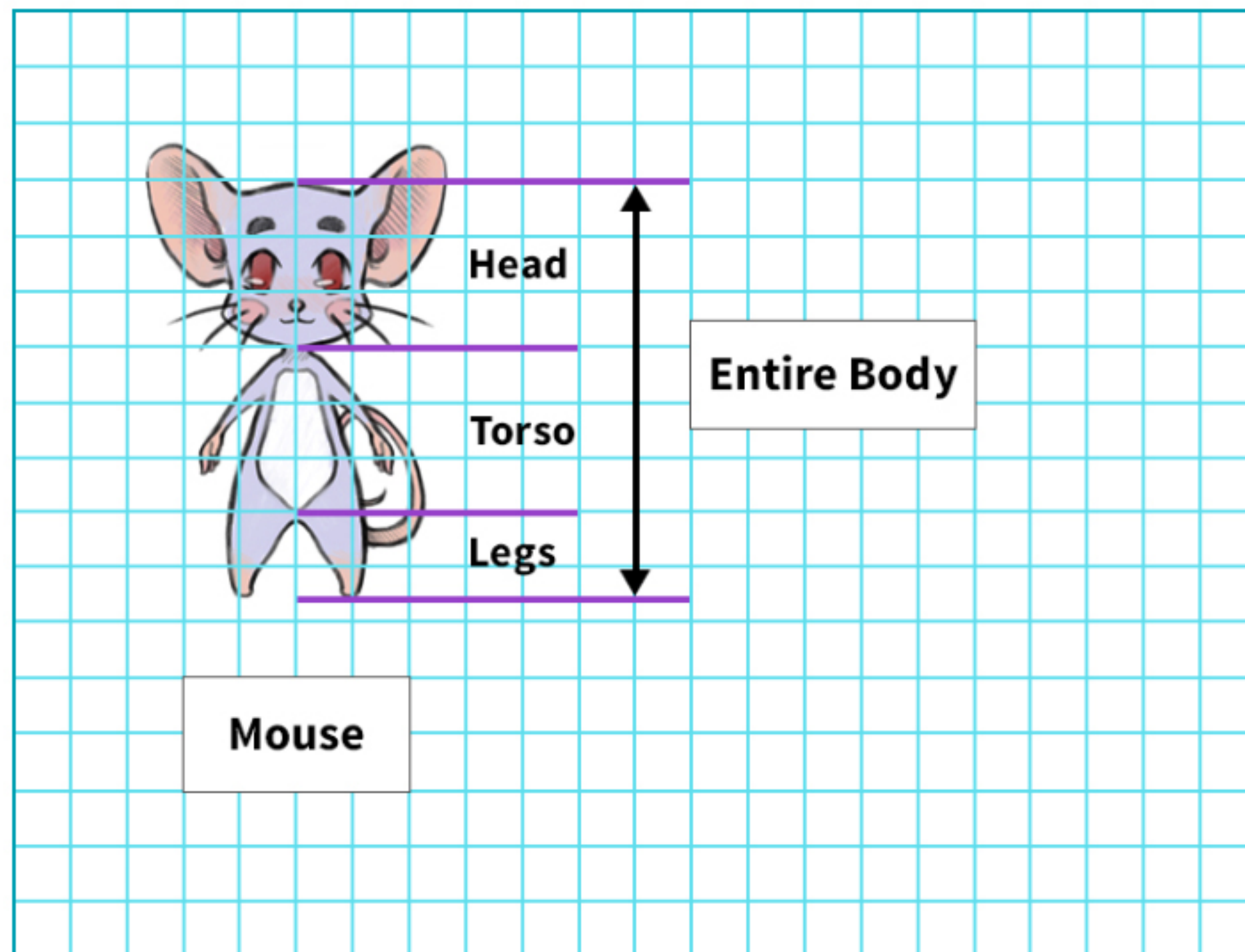
### Mouse Measurements

- The height of the head is 3 units.
- The height of the torso is 3 units.
- The height of the entire body is 7.5 units.

The height of the head is exactly what fraction of the height of the entire body?

Enter a whole number in each box to create the fraction.

Graph Paper



NEXT >



Ms. Medley

I summarized the ratios for the two characters in a table.

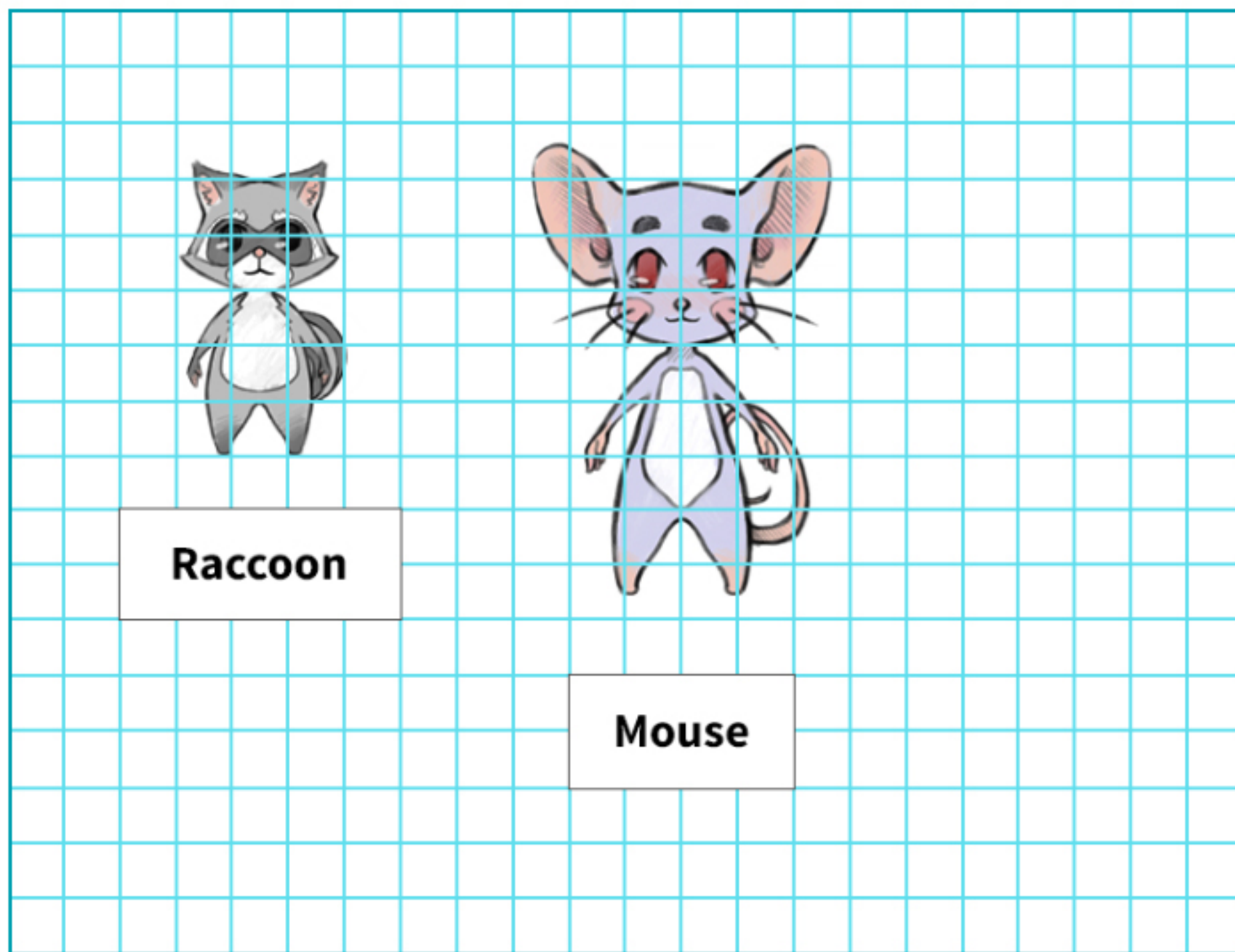
### Character Ratios

Ratios of Body Parts	Raccoon	Mouse
Head to entire body	$\frac{0}{0}$	$\frac{00}{00}$
Torso to entire body	$\frac{0}{0}$	$\frac{00}{00}$
Legs to entire body	$\frac{0}{0}$	$\frac{00}{00}$

Are the corresponding heights of the body parts for the two characters proportional?

- Yes, because each pair of fractions is equivalent.
- Yes, because the sum of the fractions for each character is 0.
- No, because  $\frac{0}{0}$  is equivalent to  $\frac{00}{00}$ , not  $\frac{0}{00}$ .
- No, because the raccoon is smaller than the mouse.

### Graph Paper



NEXT >



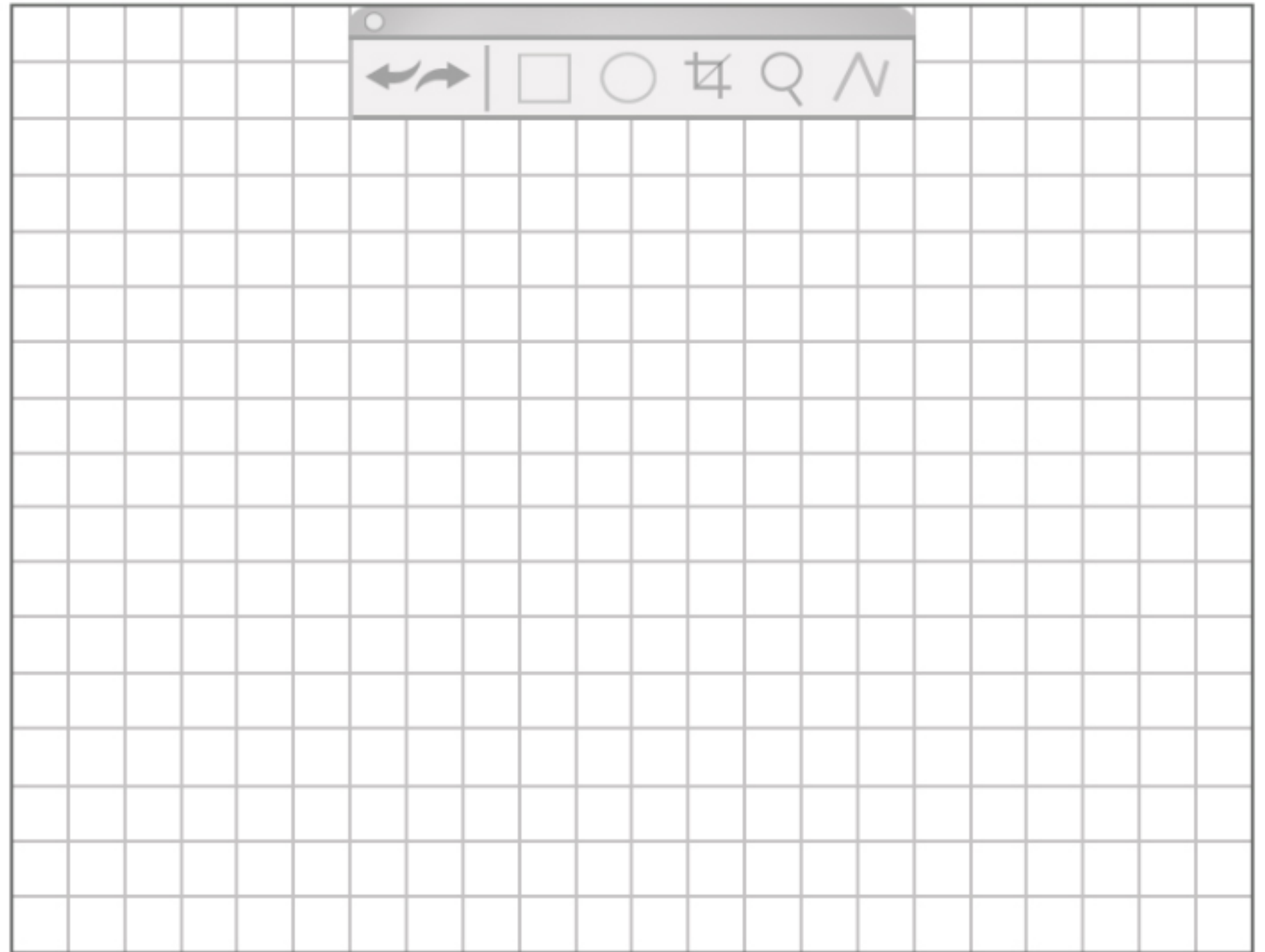
Ms. Medley

Here are the ratios and the drawing application that you will use to create your Manga character.

### Guidelines

- Ratios:
  - Head to entire body is  $\frac{0}{0}$
  - Torso to entire body is  $\frac{0}{0}$
  - Legs to entire body is  $\frac{0}{0}$

Select **Next** to continue.



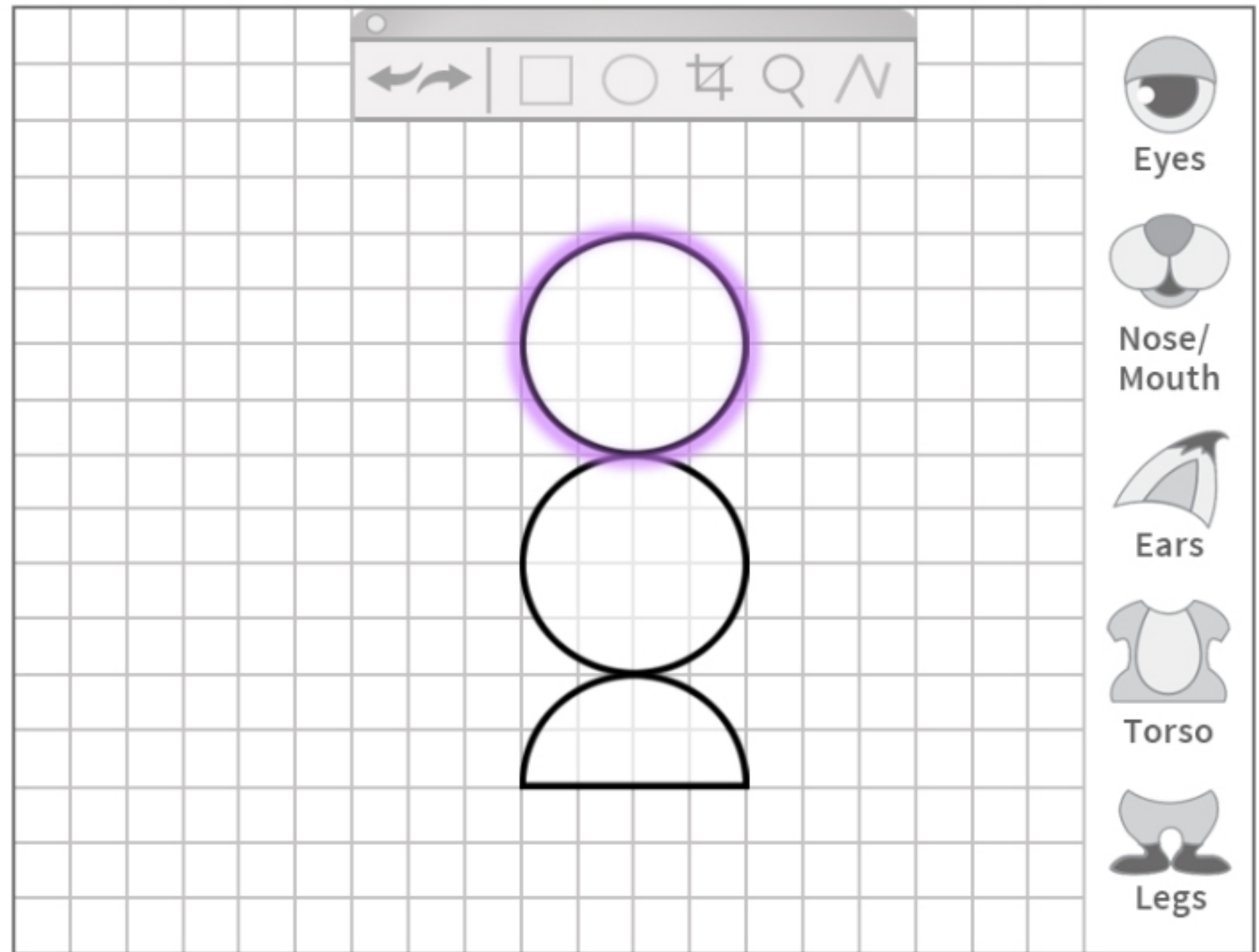
**NEXT >**



Ms. Medley

Now, let's go back to the drawing application to create the face of your character.

Select **Next** to continue.



**NEXT >**



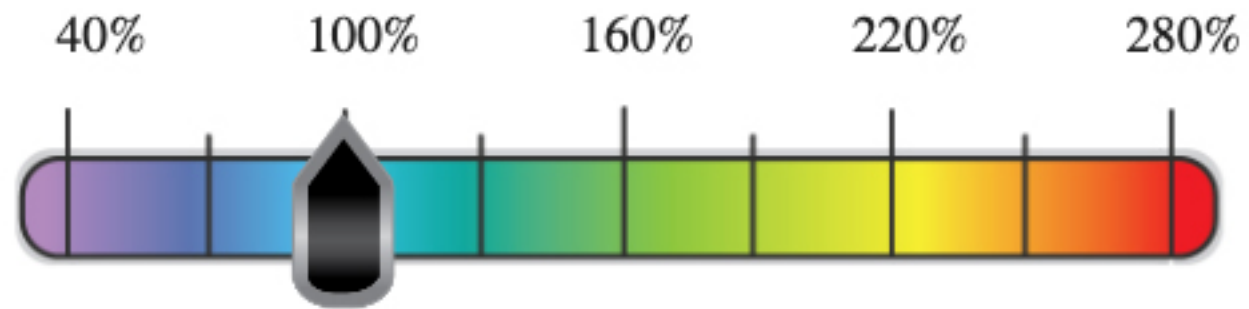
Ms. Medley

It will be easier to work on the face of your character if we first adjust its size.

Let's zoom in on the drawing to increase the diameter of the head from 4 units to 10 units.

The new diameter is what percent of the original diameter?

Move the slider to show your answer. When you are finished, press **Next** to continue.



Eyes

Nose/Mouth

Ears

Torso

Legs

**NEXT >**





Ms. Medley

Now let's determine the dimensions of the nose/mouth oval.

### Face Ratios

Part of the Face	Percent of the Head's Diameter
Diameter of each eye circle	0
Height of the nose/mouth oval	0
Width of the nose/mouth oval	0

What must be the height and width, in units, of the nose/mouth oval?

Height of the nose/mouth oval:  units

Width of the nose/mouth oval:  units

The drawing app interface shows a grid with a face drawn on it. The face consists of a large circle for the head and two smaller circles for eyes. A horizontal double-headed arrow below the face indicates a width of 10 units. On the right side, there is a vertical toolbar with icons for Eyes, Nose/Mouth, Ears, Torso, and Legs. At the top of the grid, there is a toolbar with icons for undo, redo, square, circle, eraser, lasso, and zoom.

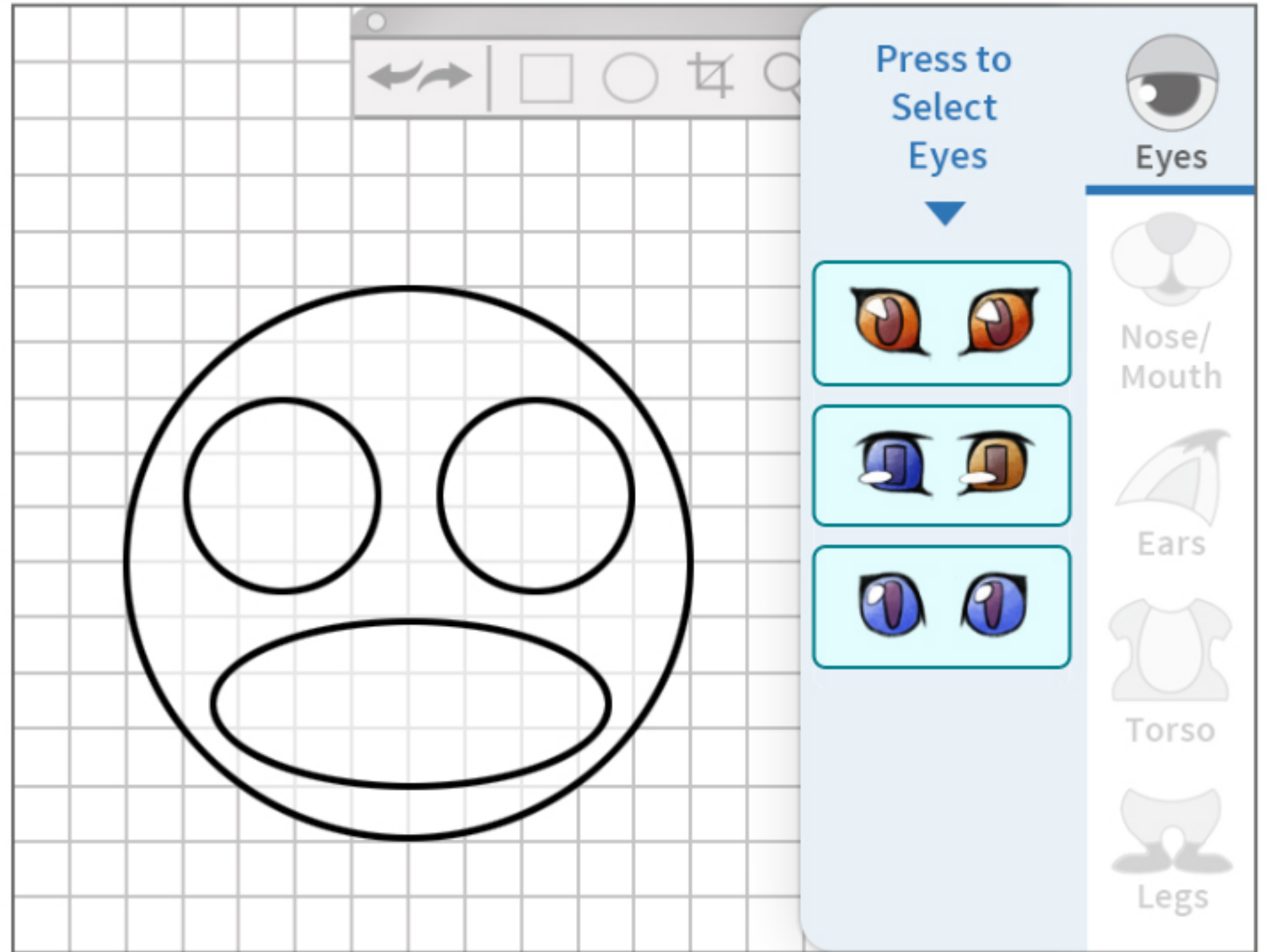


Ms. Medley

All the proportions are set.

Now comes the fun part! You get to choose the design of each part of the face.

Start by selecting the eyes you would like to use for your character.



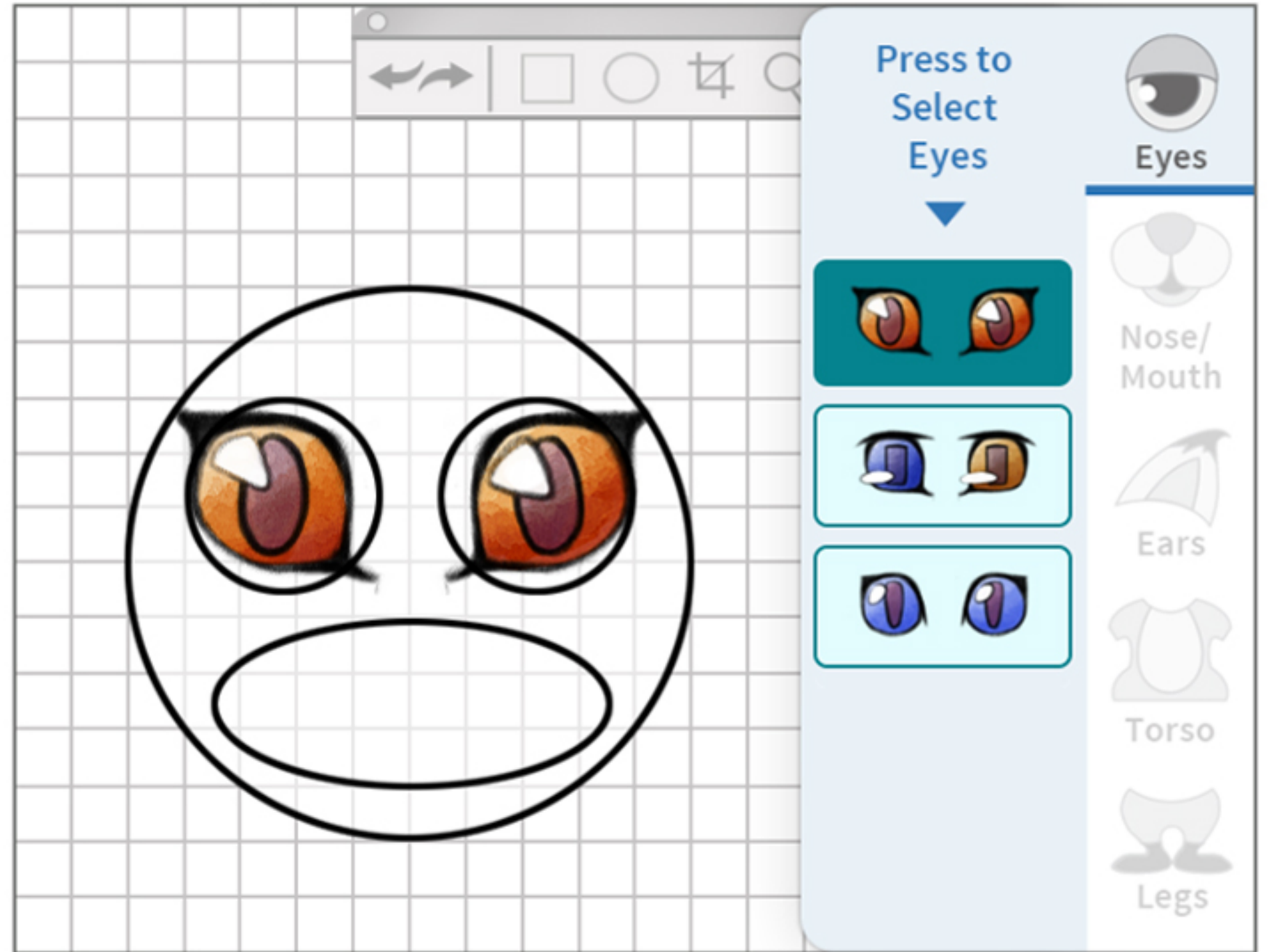


Ms. Medley

All the proportions are set.

Now comes the fun part! You get to choose the design of each part of the face.

Start by selecting the eyes you would like to use for your character.





Ms. Medley

Now select the nose and mouth you would like to use for your character.

The drawing app interface features a central grid with a character's face. The face has large, expressive orange eyes with black outlines and a simple, smiling mouth. A menu on the right side of the grid offers various customization options. At the top of the menu is a toolbar with icons for undo, redo, square, circle, crop, and zoom. Below the toolbar, the menu is organized into sections. The first section is titled 'Press to Select Nose/Mouth' and contains three options: a dark teal option with a simple nose and mouth, a light blue option with a more detailed nose and mouth, and another light blue option with a different nose and mouth design. To the right of these options are icons for other parts of the character: 'Eyes', 'Nose/Mouth', 'Ears', 'Torso', and 'Legs'. The 'Nose/Mouth' option is currently selected, indicated by a blue highlight.



Ms. Medley

Finally, select the ears you would like your character to have.

The drawing app interface features a central grid with a character's face. The face has large, expressive orange eyes with black outlines, a small brown nose, and a simple, smiling mouth. Two orange, pointed ears are currently attached to the top of the head, each outlined in purple. To the right of the grid is a vertical menu titled "Press to Select Ears" with a downward arrow. The menu contains three rows of ear options, each in a light blue box. The top row shows two pointed ears with a white patch on the inside. The middle row shows two simple, rounded ears. The bottom row shows two pointed ears with a white patch on the inside, similar to the ones currently on the character. To the right of these boxes are icons for other body parts: "Eyes" (a simple eye), "Nose/Mouth" (a simple nose and mouth), "Ears" (a single ear), "Torso" (a simple torso outline), and "Legs" (a simple pair of legs). The "Ears" icon is currently highlighted with a blue border.



Ms. Medley

OK! Let's finish up the rest of your character. The other body parts don't have as much detail, so let's work from the original size.

Select the torso you would like to use for your character.

The drawing app interface features a central grid workspace. On the left, a character's head and neck are drawn in orange and white. On the right, a vertical menu titled "Press to Select Torso" offers three torso options: a light blue one, a white one, and a dark teal one. The dark teal option is currently selected. To the right of the torso menu are icons for "Eyes", "Nose/Mouth", "Ears", "Torso", and "Legs". A toolbar at the top of the grid includes navigation and drawing tools.



Ms. Medley

Now, select the legs you would like your character to have.

The drawing app interface features a central grid workspace where a cartoon fox character is being assembled. The character has a white face with large orange eyes, small orange ears, and a white chest. It is currently missing its legs. To the right of the grid is a vertical menu titled "Press to Select Legs" with a downward arrow. Below the title are three leg options, each in a light blue box: the top two are identical and show orange legs with a white patch on the inner side, while the bottom one shows orange legs with a white patch on the outer side. To the right of these boxes is a vertical list of other body parts: Eyes, Nose/Mouth, Ears, Torso, and Legs. The "Legs" option at the bottom is highlighted with a blue bar and a white underline.



Ms. Medley

We are done with the first part of the project.

- ✓ 1. Create a character using guidelines that I will provide.
2. Use the character to create a one-page storyboard.

Select **Next** to continue.



**NEXT** >



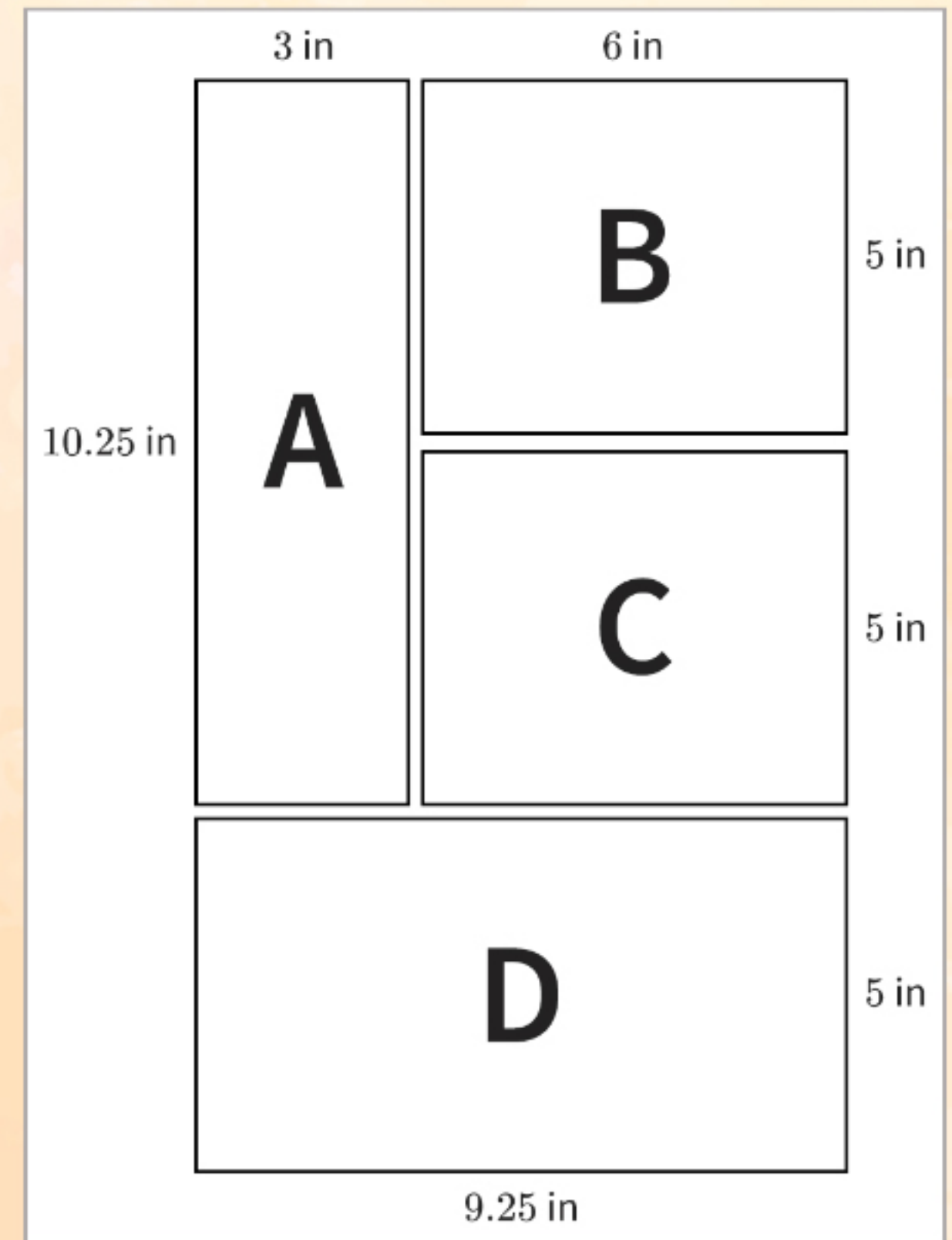


Ms. Medley

Let's work on the storyboard now.

A storyboard is a sequence of drawings that tells a short story. Your storyboard will use the character you created.

For your storyboard, the page is divided into four panels. The dimensions of each panel are shown in the figure.



Note: Images not drawn to scale.

NEXT >



Ms. Medley

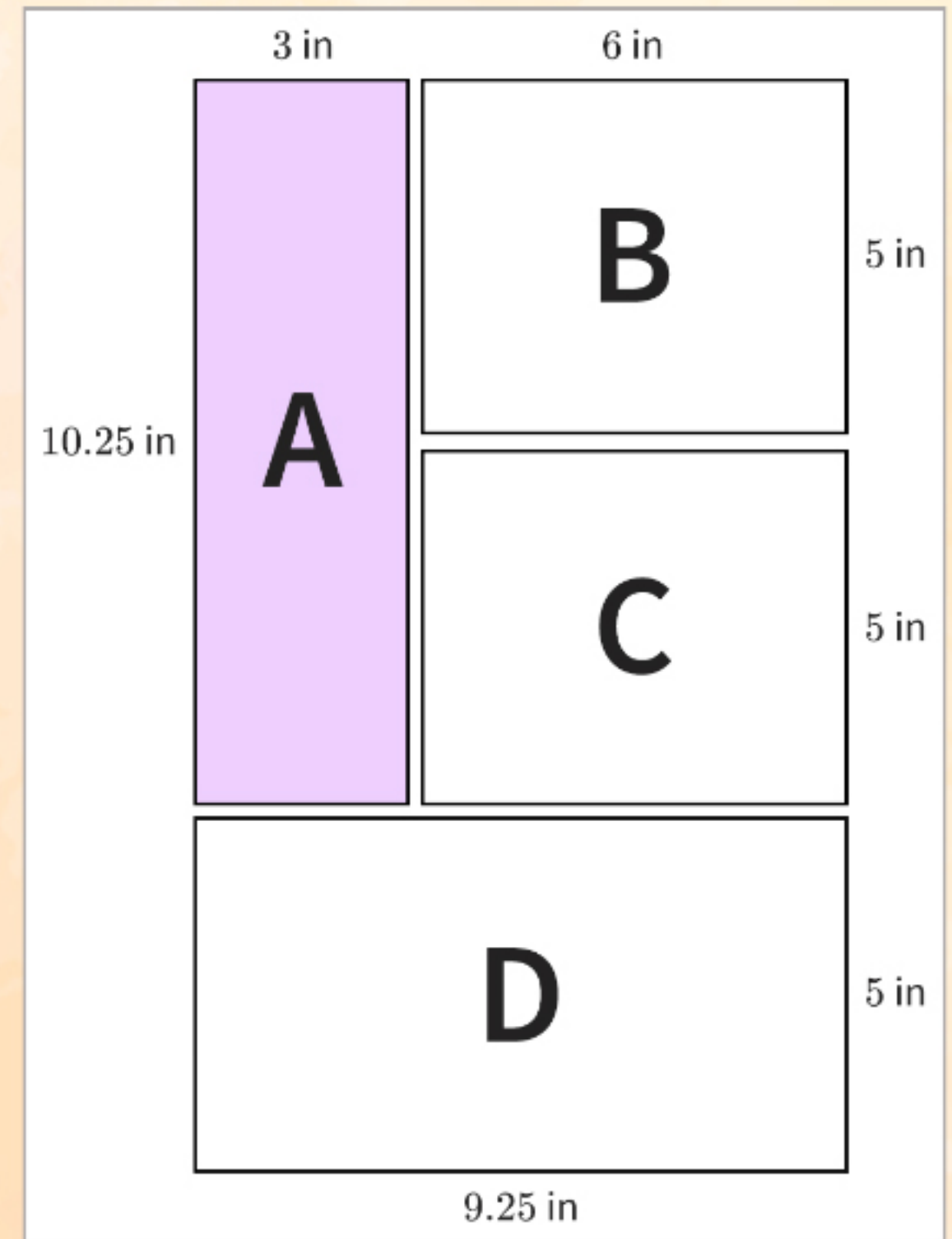
To fit Drawing 1 into Panel A, we first need to check that they are proportional.

Are the dimensions of Drawing 1 proportional to the dimensions of Panel A?

- Yes, Drawing 1 and Panel A are proportional with a scale factor of  $\frac{0}{0}$ .
- Yes, Drawing 1 and Panel A are proportional with a scale factor of  $\frac{0}{0}$ .
- No, Drawing 1 and Panel A are not proportional because  $\frac{0}{0} \neq \frac{0000}{0000}$ .
- No, Drawing 1 and Panel A are not proportional because  $(0000 - 0) \neq (00 - 0)$ .



Drawing 1



Note: Images not drawn to scale.



Ms. Medley

I think Drawing 2 should fit well in Panel B. They seem to be proportional.

Create an equation that shows that Drawing 2 is proportional to Panel B.

Move a ratio into each box.

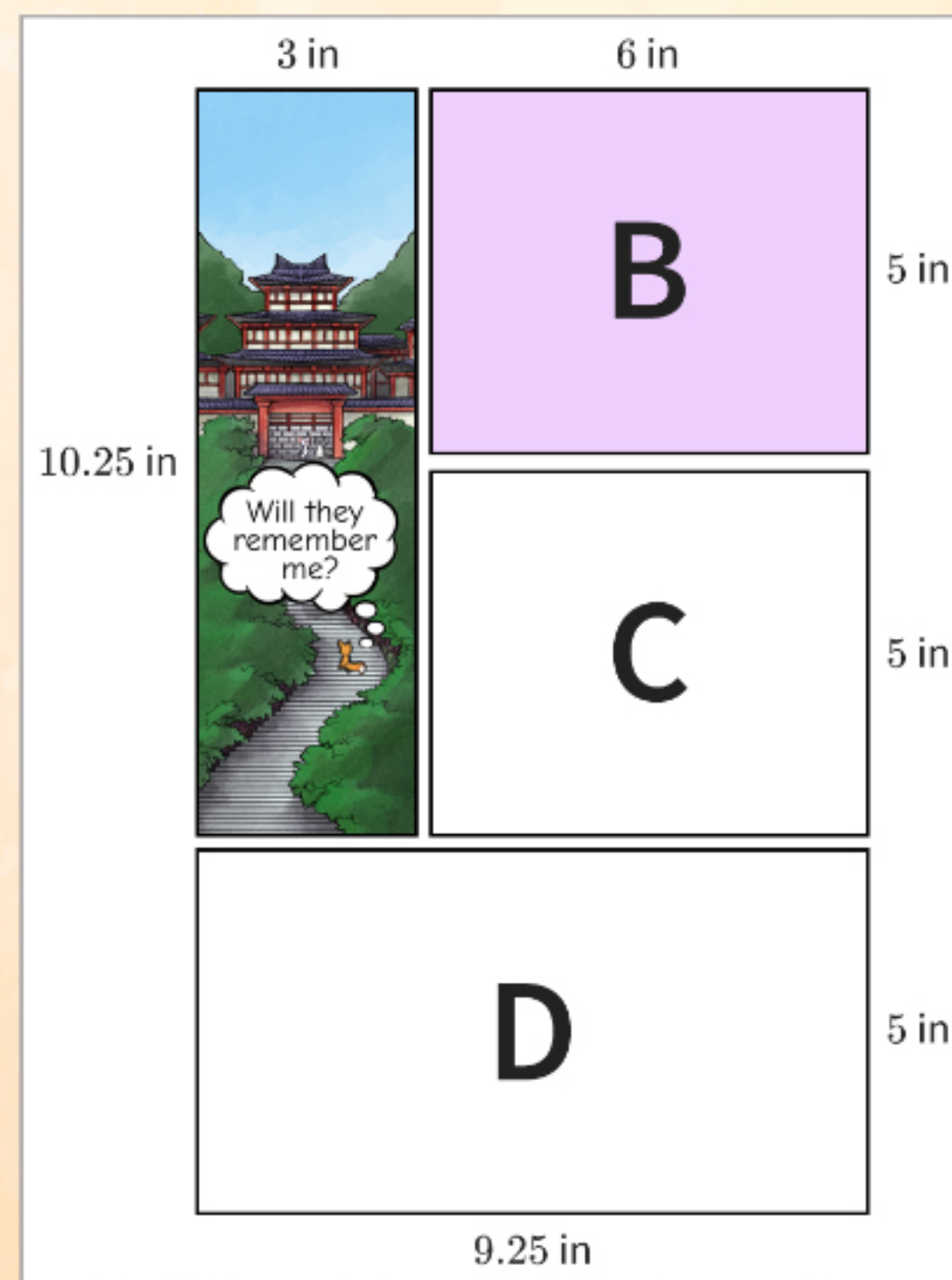
$\frac{0}{0}$	$\frac{00}{00}$	$\frac{0}{0}$	$\frac{00}{00}$
---------------	-----------------	---------------	-----------------

$\frac{0}{0}$	$\frac{00}{00}$	$\frac{0}{0}$	$\frac{00}{00}$
---------------	-----------------	---------------	-----------------

=



Drawing 2



Note: Images not drawn to scale.



Ms. Medley

I updated our storyboard with art in Panel C, but it's missing the mouse character.

We will include Drawing 3, the image of the mouse, by rescaling it so that it fits vertically. After rescaling, the height of Drawing 3 will be 5 inches and its width will be  $w$  inches.

First, let's determine the value of  $w$ .

Which of the following equations can be used to determine the value of  $w$ ?

$0 = 0000000$

$0 = 0000000$

$0 = 0000000$

$0 = 0000000$



Drawing 3



Note: Images not drawn to scale.



Ms. Medley

Here is what you have done so far.

Let's finish up the storyboard by working on Panel D.

Select **Next** to continue.

	3 in	6 in	
			5 in
10.25 in			5 in
			5 in
	9.25 in		

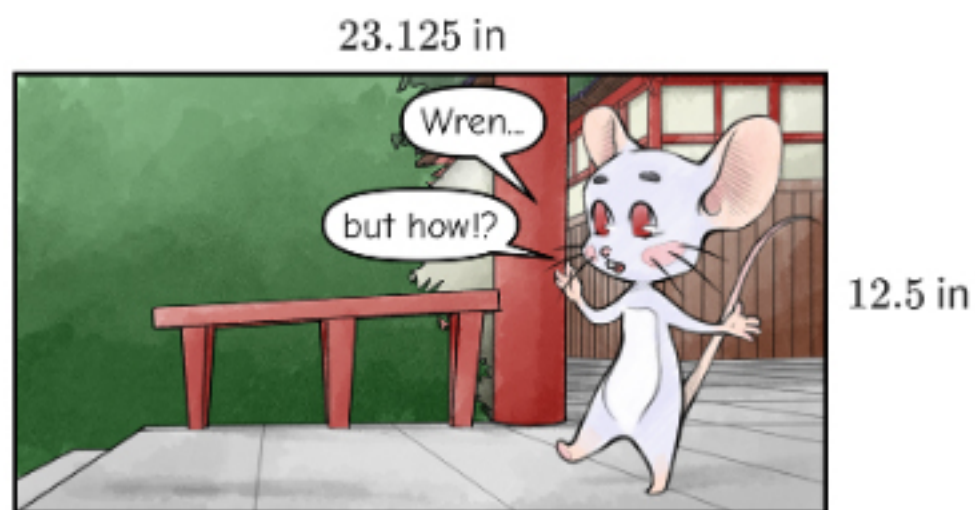
Note: Images not drawn to scale.

**NEXT >**



Ms. Medley

Drawing 4 is proportional to Panel D but needs to be rescaled so that it fits.



Drawing 4

By what percent should Drawing 4 be scaled so that it fits exactly into Panel D?

%



Note: Images not drawn to scale.



Ms. Medley

Your project is complete. Great job!

- ✓ 1. Create a character using guidelines that I will provide.
- ✓ 2. Use the character to create a one-page storyboard.

Thank you!

I hope you had fun.



NEXT >