

# Powering an Interactive SVG and JavaScript Game Engine

with **Drupal**



# Peter Weber

FRONT-END ENGINEER

@zrpnr

peter@aten.io



**ATEN**

@atendesign / aten.io



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THE WORLD BANK  
Working for a World Free of Poverty

Poynter.



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BLOOMBERG  
SCHOOL of PUBLIC HEALTH



GUTTMAN  
INSTITUTE



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FROM THE AMERICAN PEOPLE

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UNIVERSITY OF CALIFORNIA



Stanford  
University



# Work That Matters



Poynter.



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DENVER

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MORGRIDGE COLLEGE OF EDUCATION  
Marsico Institute for Early Learning & Literacy

# Test making

Assessment tool

Flexible, re-usable

Hundreds of test items

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## Run an Assessment

**Student** \*

Joe - C



**Testlet** \*

Measurement G2 v2 - Length



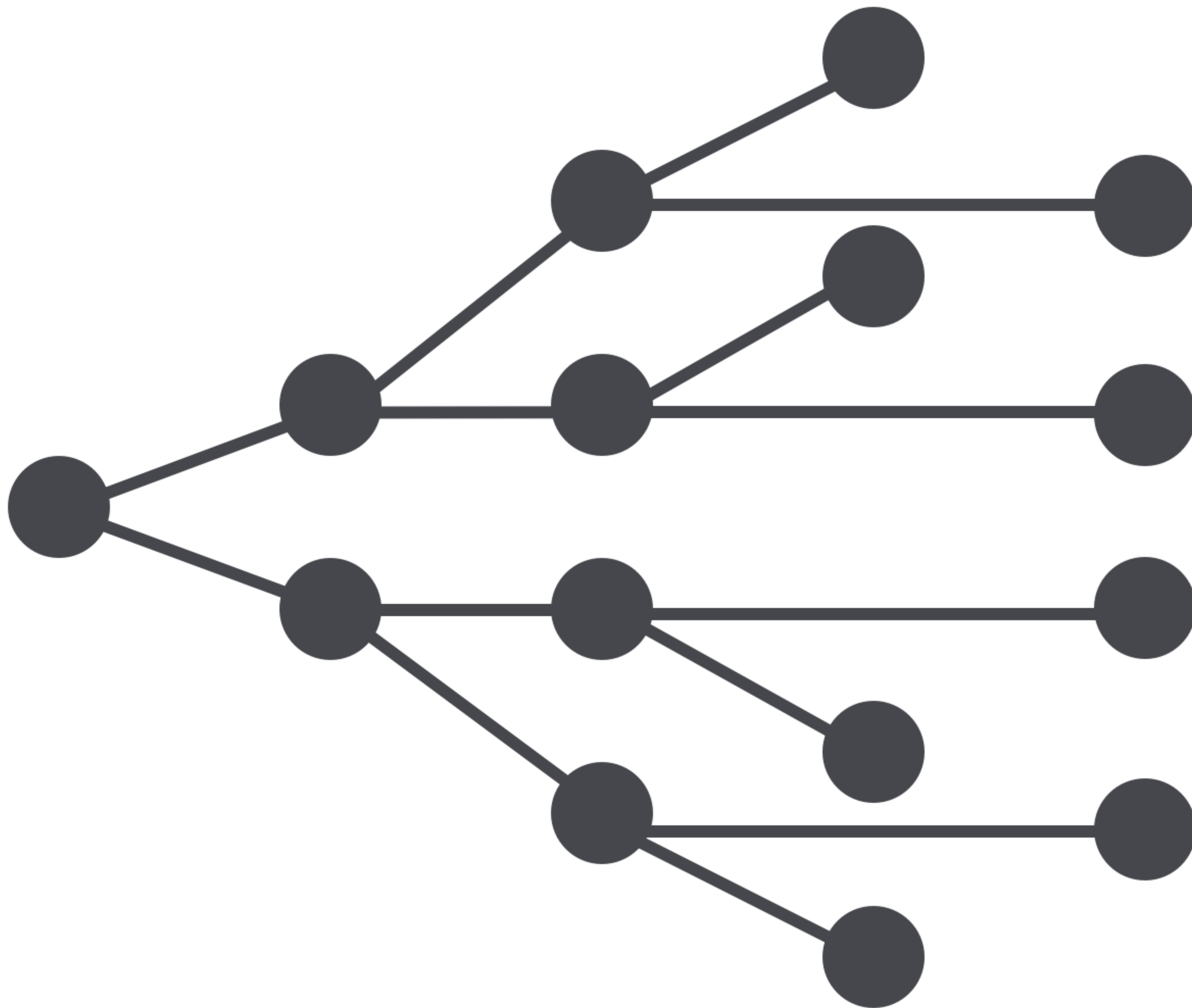
**Language** \*

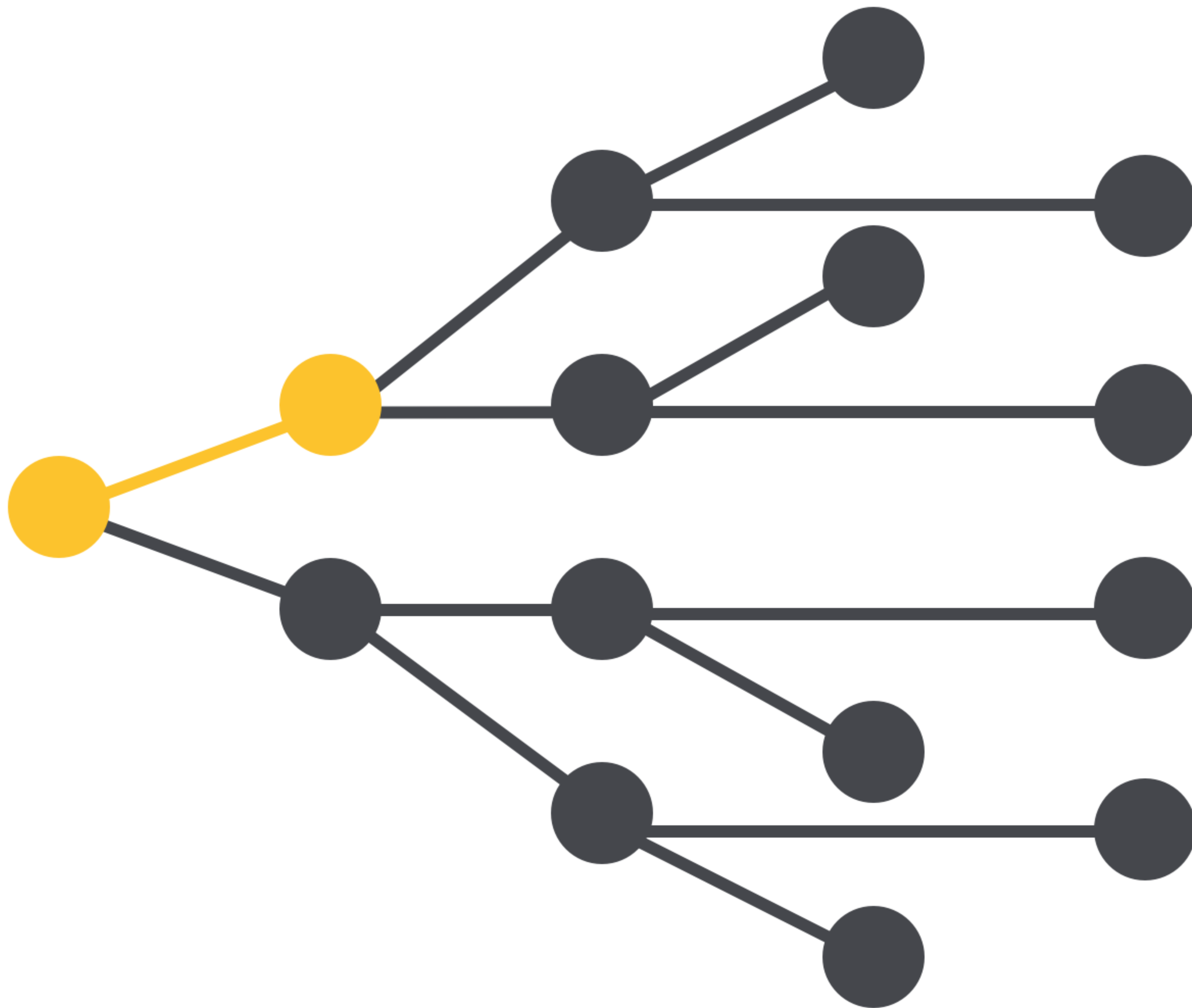
ENGLISH

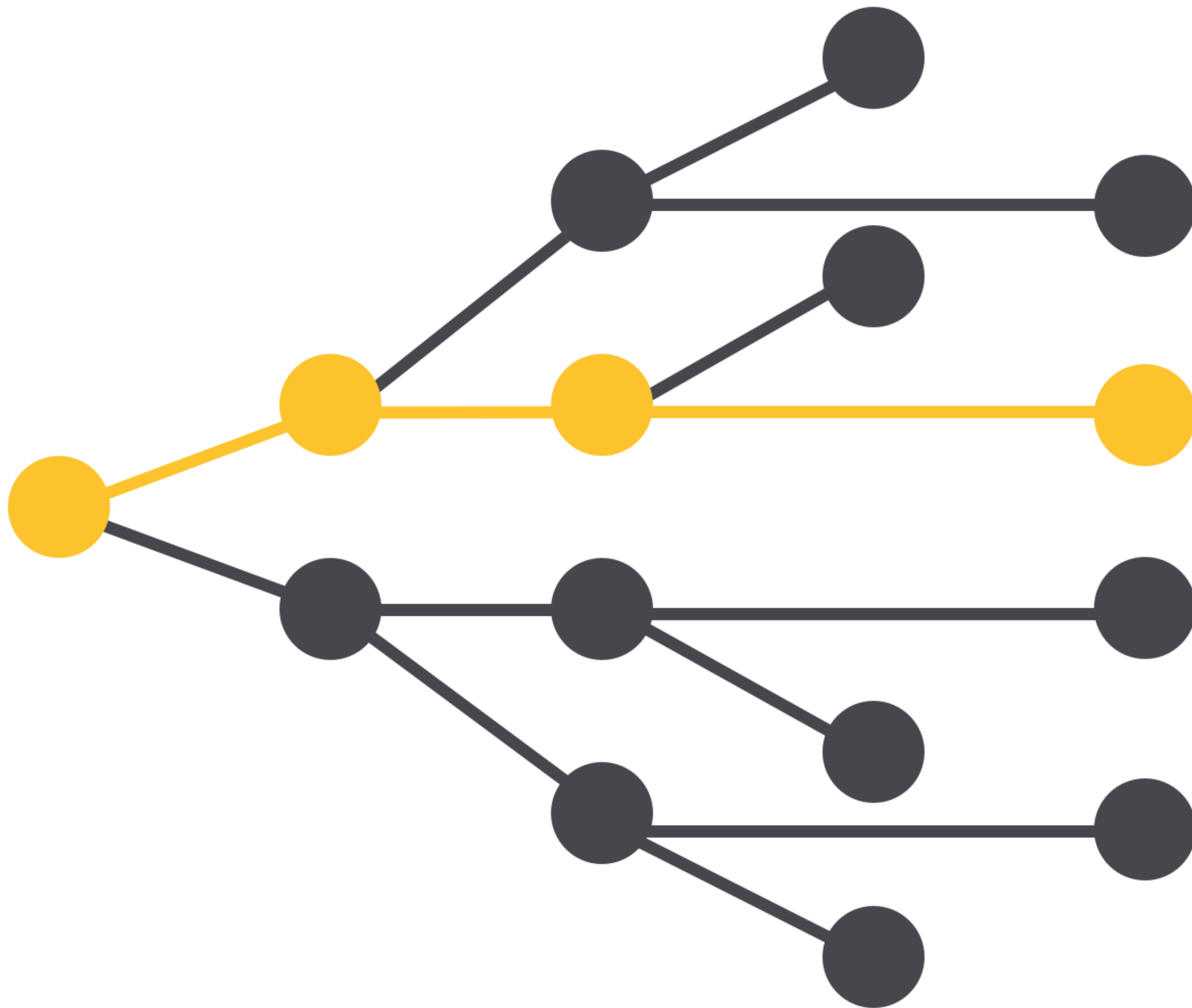
SPANISH



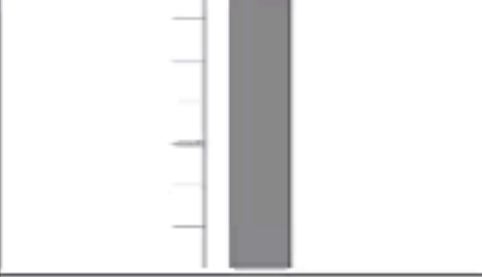


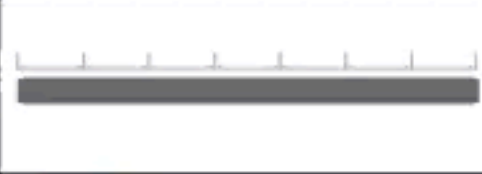



Save





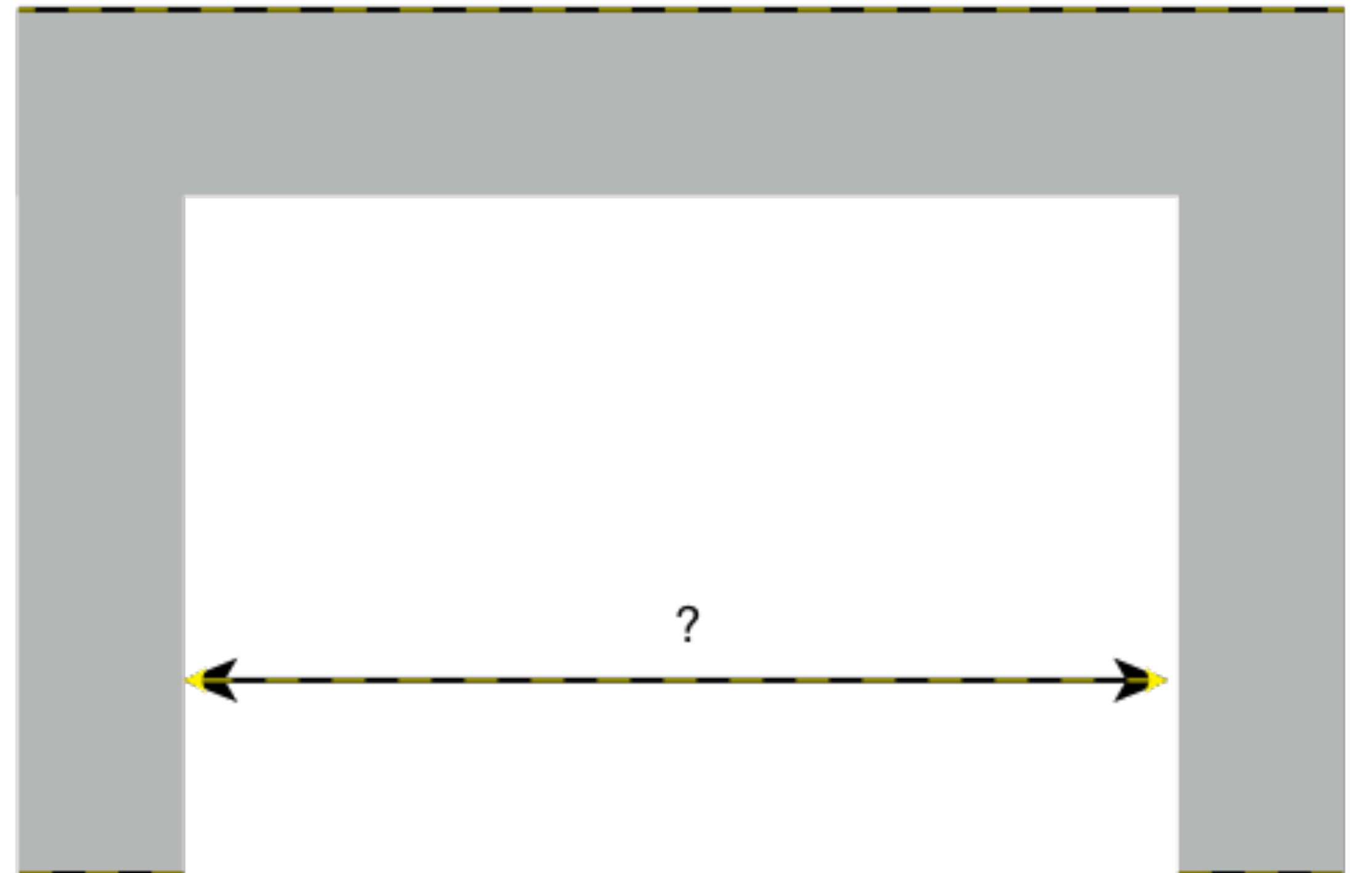




Perm Name	Programming specifications		Wording of item/description (Text to be read aloud)	Animations and/or manipulations	Layer Name/Identifier
GMLN_CMB4-B	Image is displayed on screen.			Highlight gray strip.	Layer 1, gray strip
GMLN_CMB6	Image is displayed on screen.		I want to measure this gray strip	Highlight the gray strip.	Layer 1, gray strip
			but my ruler doesn't have any numbers on it.	Highlight ruler.	Layer 1, ruler
			How long do you think the gray strip is?		
GMLN_CMB6-B	Image is displayed on screen.		I want to measure this gray strip	Highlight gray strip.	Layer 1, gray strip
			but my ruler doesn't have any numbers on it.	Highlight ruler.	Layer 1, ruler
			How long do you think the gray strip is?		
GMLN_CMB7	Image is displayed on screen.		I want to measure this gray strip	Highlight gray strip.	Layer 1, gray strip
			but my ruler doesn't have any numbers on it.	Highlight ruler.	Layer 1, ruler
			How long do you think the gray strip is?		
GMLN_CMB7-B	Image is displayed on screen.		I want to measure this gray strip	Highlight gray strip.	Layer 1, gray strip
			but my ruler doesn't have any numbers on it.	Highlight ruler.	Layer 1, ruler
			How long do you think the gray strip is?		
GMLN_19-CA	Display image of 5 blue strips all oriented horizontally (2, 3, 4, 5, and 6 inches long). "Pile" of inch squares off to the side (not to exceed 20).		Which of these blue strips is about the same length as 4 of these tiles?	None. (Child is able to move the inch squares one at a time to align as many as they wish along the strips. Tiles should not "snap" to any guides. There should be no more than 20 available tiles.)	Layer 1, o1-o20 (ability to move inch squares)
			Which of these red strips is about the same length as 5 of these tiles?	None. (Child is able to move the inch squares one at a time to align as many as they wish along the strips. Tiles should not "snap" to any guides. There should be no more than 20 available tiles.)	Layer 1, blue box (ability to move inch squares)
GMLN_19-CA	Display image of 5 red strips all oriented horizontally (2, 3, 4, 5, and 6 inches long). "Pile" of inch squares off to the side (not to exceed 20).		Which of these red strips is about the same length as 5 of these tiles?	None. (Child is able to move the inch squares one at a time to align as many as they wish along the strips. Tiles should not "snap" to any guides. There should be no more than 20 available tiles.)	Layer 1, blue box (ability to move inch squares)
			Which of these green strips is about the same length as 6 of these tiles?	None. (Child is able to move the inch squares one at a time to align as many as they wish along the strips. Tiles should not "snap" to any guides. There should be no more than 20 available tiles.)	Layer 1, orange box (ability to move inch squares)
GMLN_19-CA	Display image of 5 green strips all oriented horizontally (2, 3, 4, 5, and 6 inches long). "Pile" of inch squares off to the side (not to exceed 20).		Which of these green strips is about the same length as 6 of these tiles?	None. (Child is able to move the inch squares one at a time to align as many as they wish along the strips. Tiles should not "snap" to any guides. There should be no more than 20 available tiles.)	Layer 1, orange box (ability to move inch squares)
			Which of these green strips is about the same length as 6 of these tiles?	None. (Child is able to move the inch squares one at a time to align as many as they wish along the strips. Tiles should not "snap" to any guides. There should be no more than 20 available tiles.)	Layer 1, orange box (ability to move inch squares)

# Graphic Assets

1. Created in Illustrator
2. Required to be interactive
3. Animations, reveals



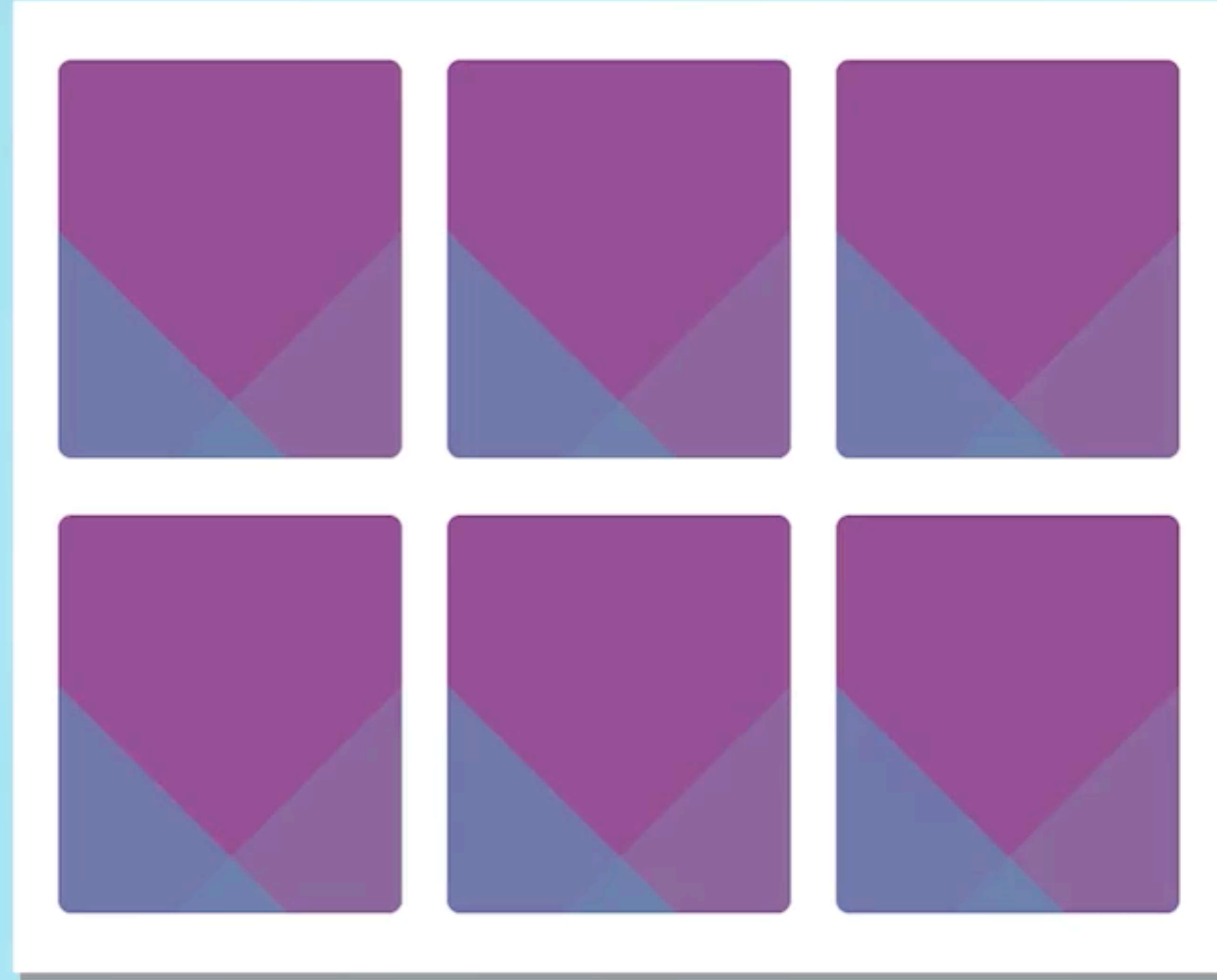
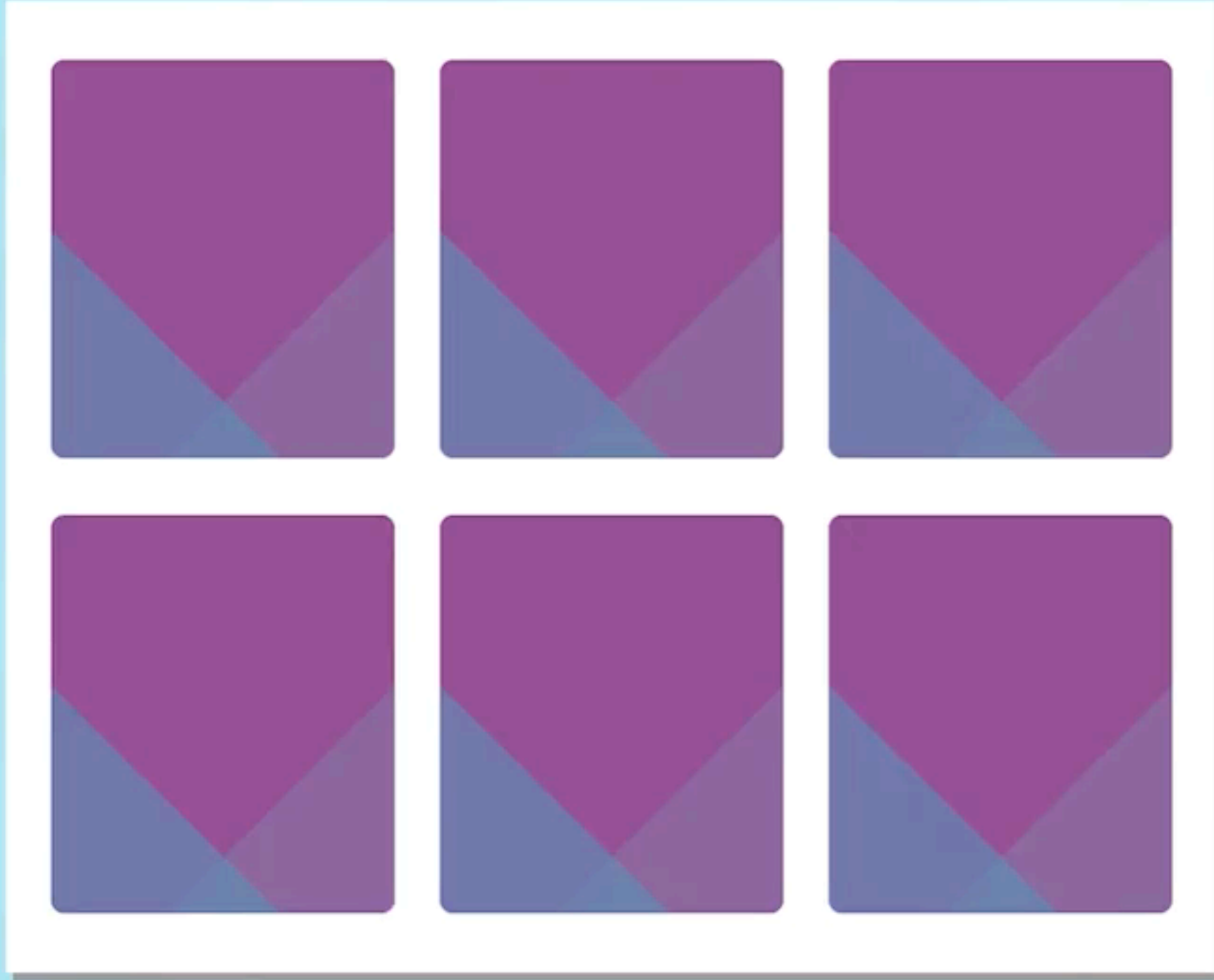


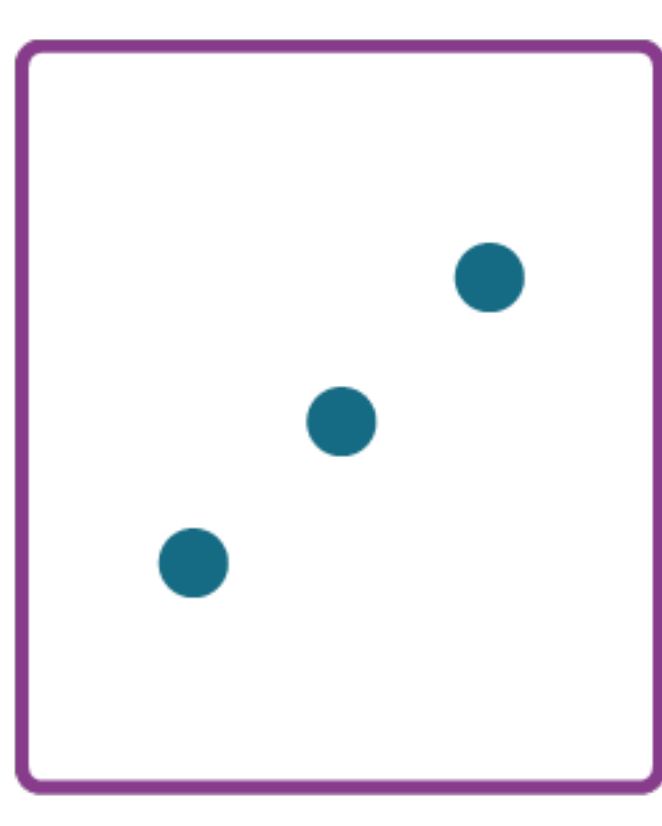
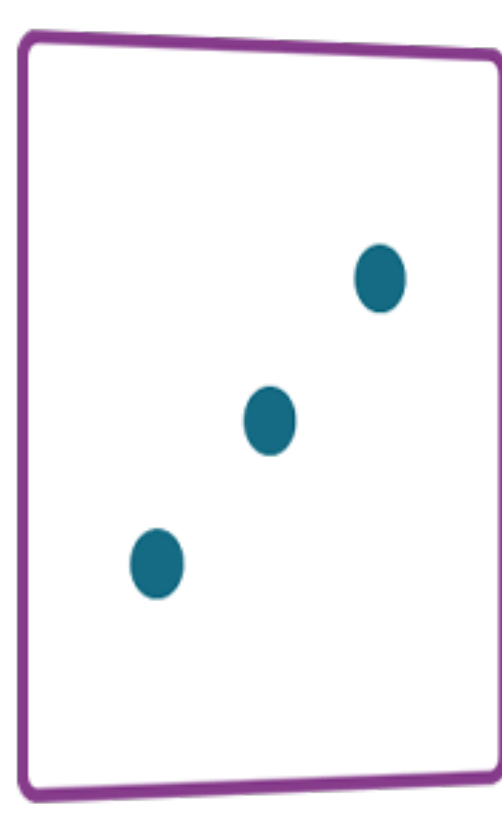
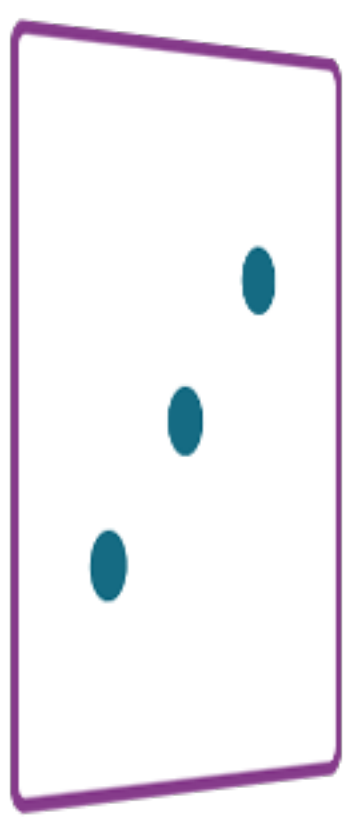
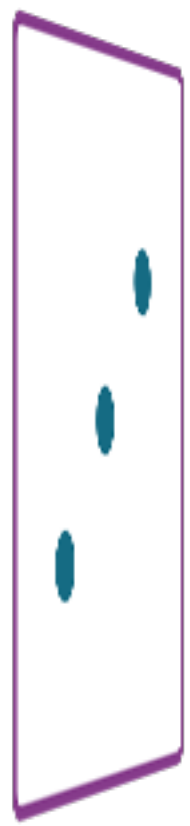
OK

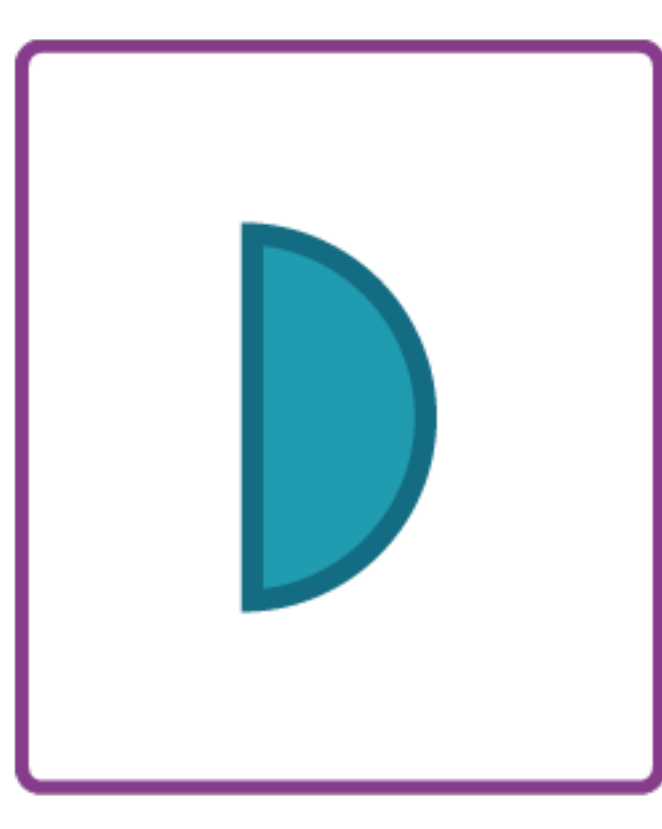
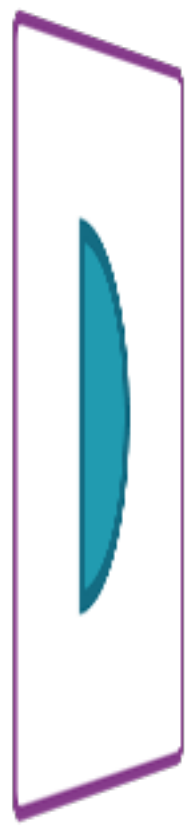


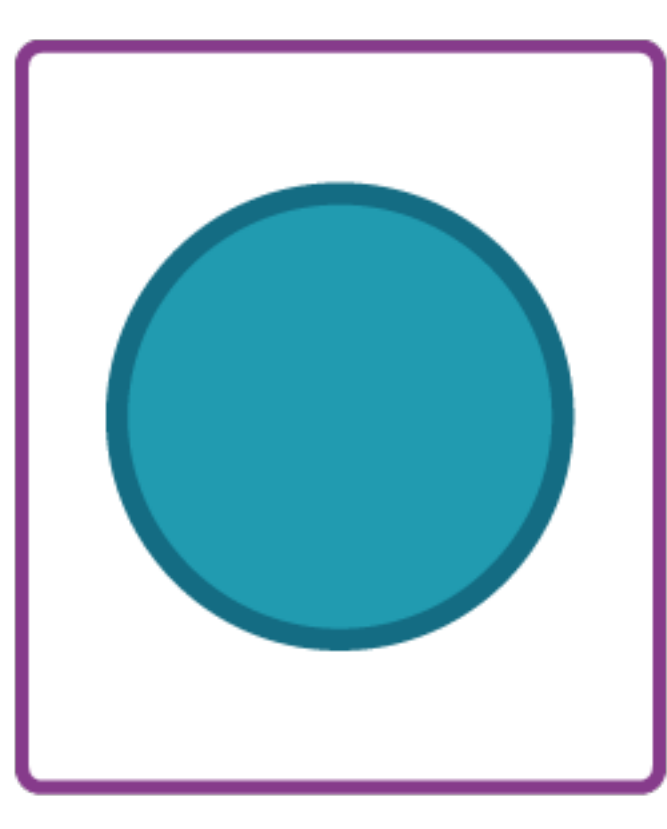
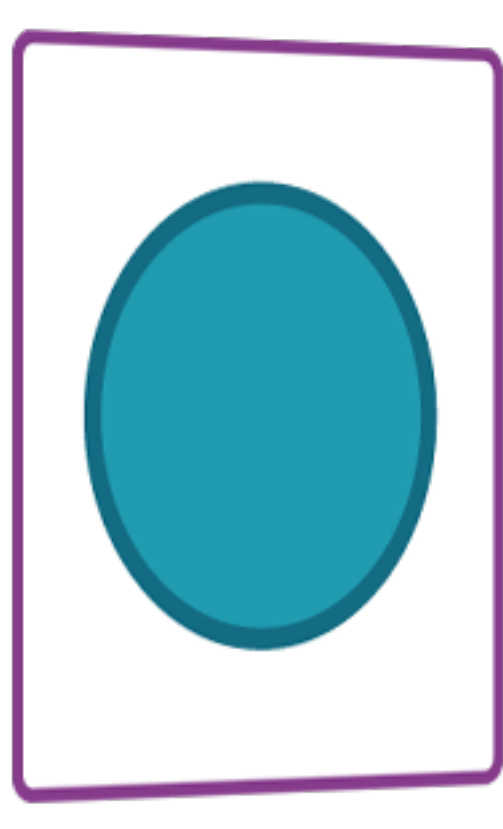
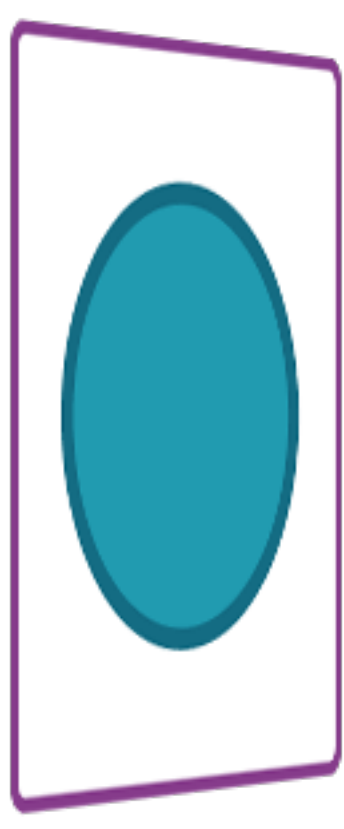
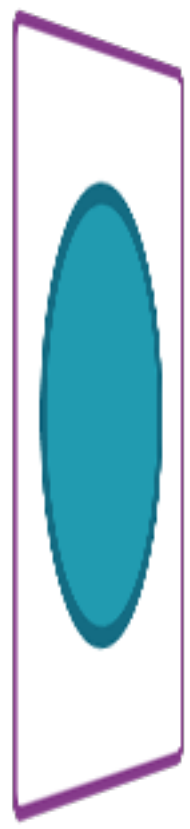
OK

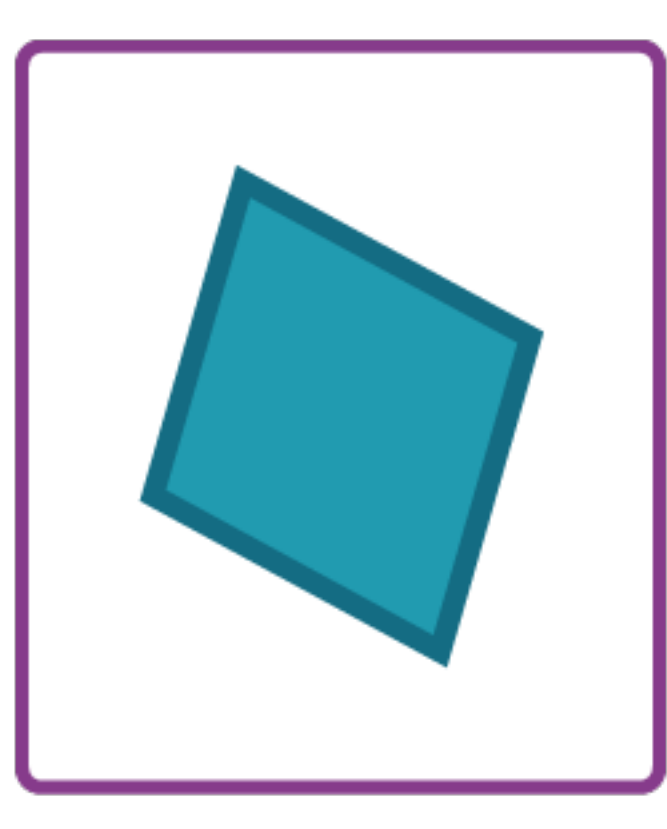
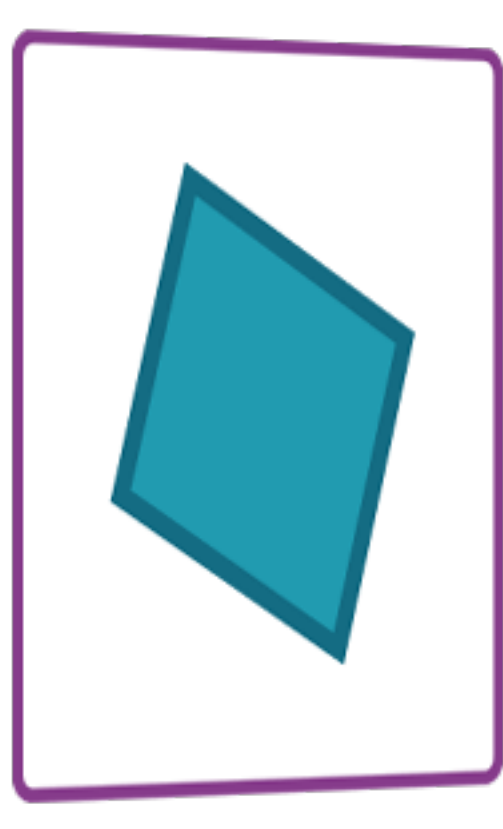
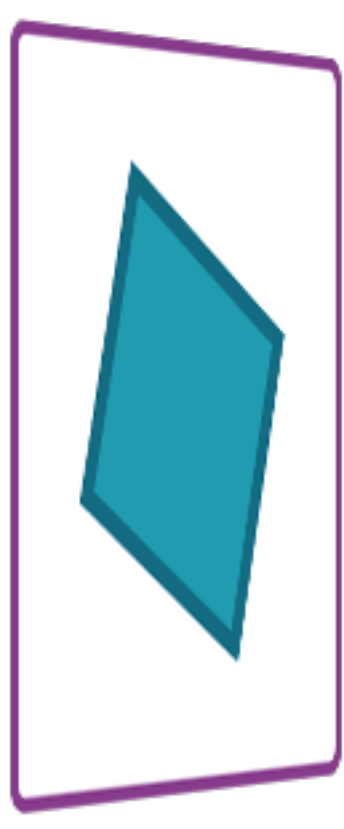
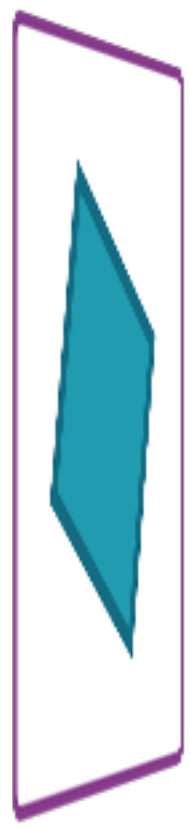


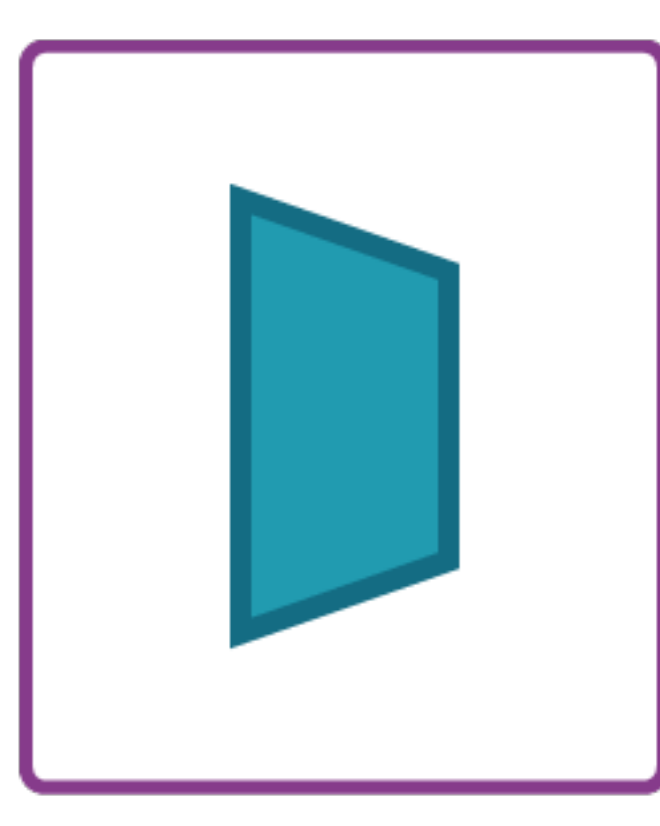
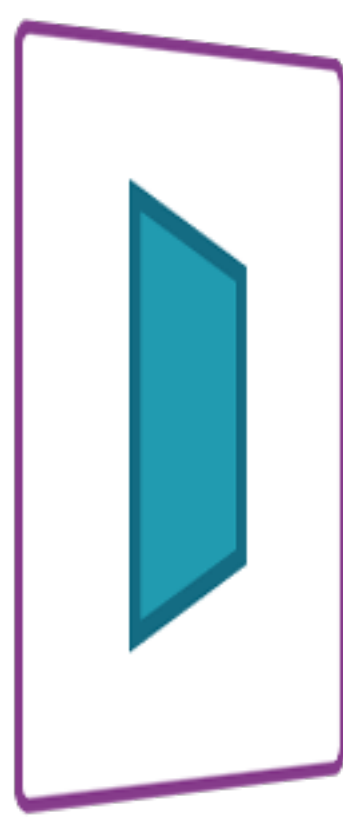
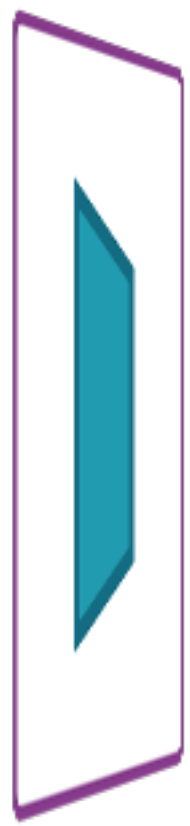












# Lessons Learned

1. Focus on performance
2. Separate config from content
3. Make EVERYTHING configurable
4. Make re-usable elements
5. Control animation dynamically

**Saved by  
SVG**



# SVG Advantages

- Lightweight
- Scalable
- Selectable

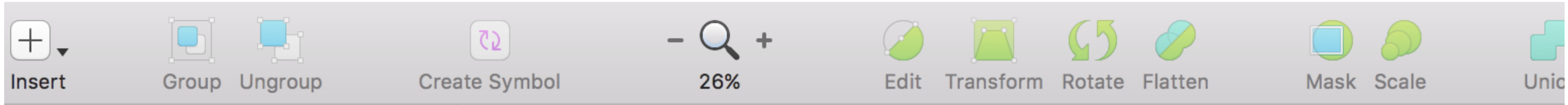
O'REILLY®



# SVG Animations

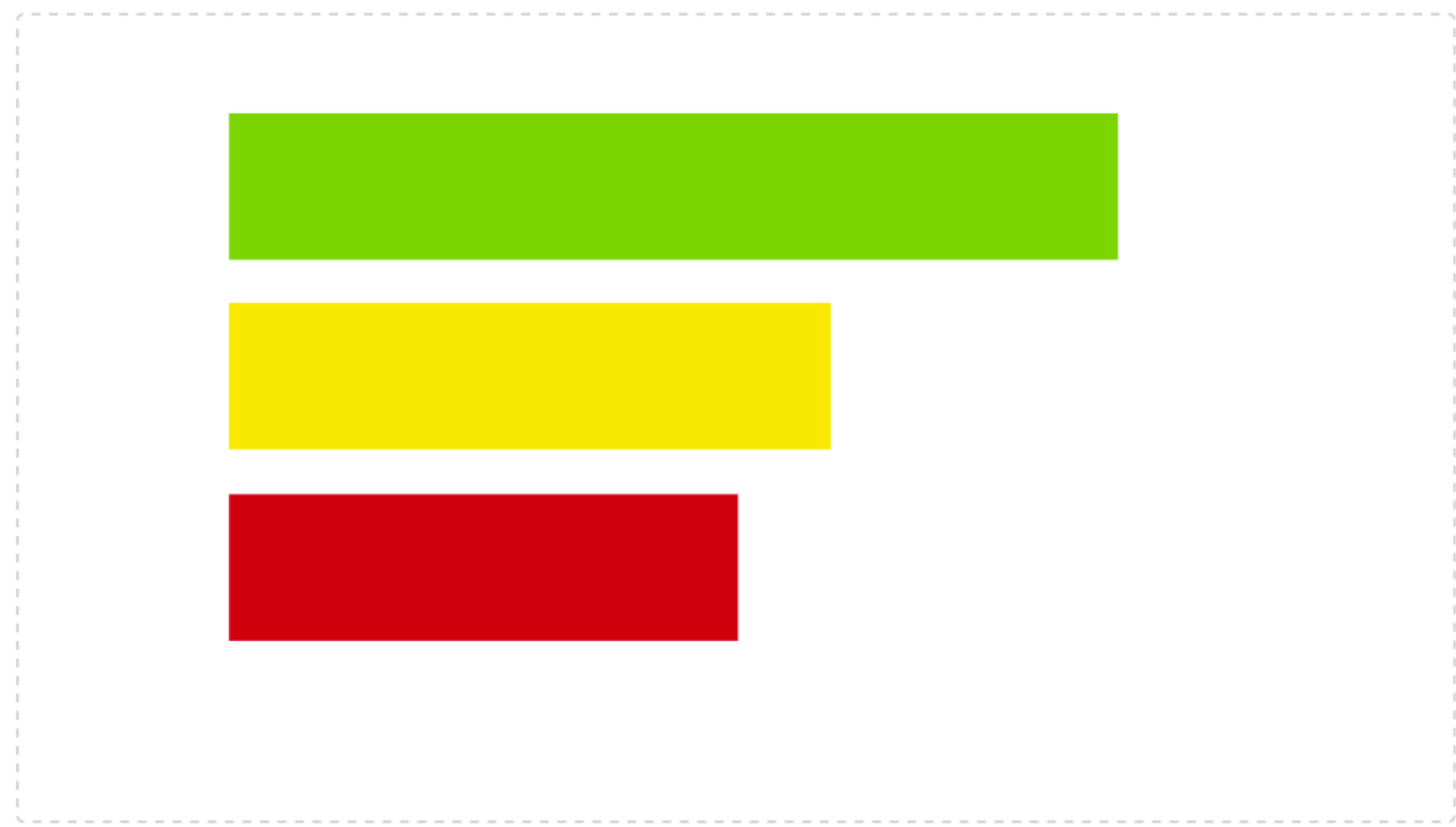
FROM COMMON UX IMPLEMENTATIONS TO  
COMPLEX RESPONSIVE ANIMATION

Sarah Drasner



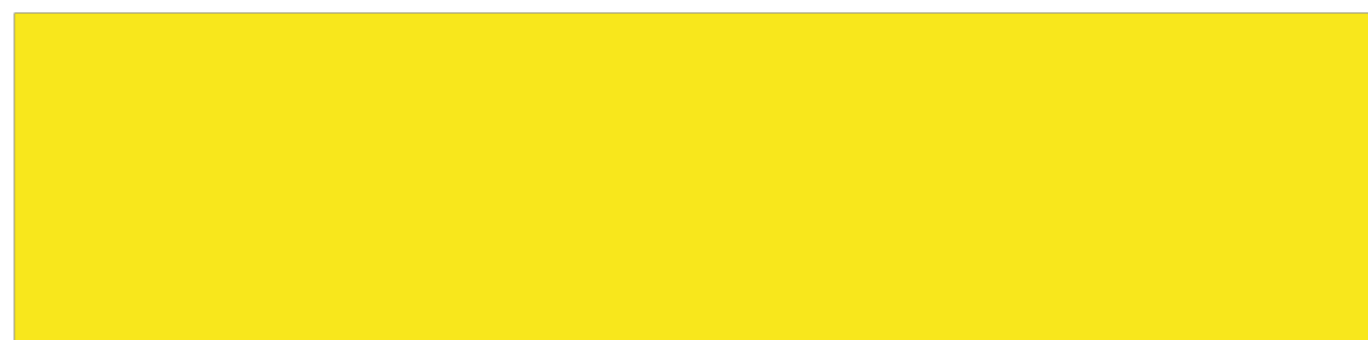
Page 1 ▾

- red
- yellow
- green
- example



<https://github.com/svg/svgo>

<https://github.com/BohemianCoding/svg-compressor>



```
<svg xmlns="http://www.w3.org/2000/svg" width="1920" height="1080" viewBox="0 0 1920 1080">
  <rect id="green" width="1000" height="180" x="20" y="130" fill="#7ED321"/>
  <rect id="yellow" width="800" height="180" x="20" y="380" fill="#F8E81C"/>
  <rect id="red" width="600" height="180" x="20" y="640" fill="#D0011B"/>
</svg>
```



# GreenSock

Engaging the Internet

**Back to**

**Drupal**

# Content and Configuration

- Upload assets
- Define gameplay and interactivity
- Generate audio
- Built in Multilingual

# Just a file field...

1

SVG

Choose File No file chosen

Provide the SVG graphic that has been given IDs.  
One file only.  
2 MB limit.  
Allowed types: svg.

2

SVG

 cremat-example00005.svg

Remove

Provide the SVG graphic that has been given IDs.



# Parsing Requirements

Correct

0

1

Prompt Used

0

1

Timer

10 seconds

# Just a form...

**Correct** \*

0 = FALSE | 1 = TRUE

**Student's Answer** \*

The Student's answer.

**Completion Time** \*

Time in seconds.

**Prompt Used** \*

0 = FALSE | 1 = TRUE

**Next!**

# Parsing Requirements

Correct

0

1

Prompt Used

0

1

Timer

10 seconds

**Shape Interactions**

Translation

Rotation (30deg) & Translation

SVG ID \*

redRectangle

The ID from the uploaded SVG file. IDs are typically specified in Sketch or Adobe Illustrator.

Type \*

translation (free) ▼

Create Shape Interaction

Cancel



SVG ID \*

redRectangle

The ID from the uploaded SVG file. IDs are typically specified in Sketch or Adobe Illustrator.

Type \*

rotation (30degree increments) ▼

Create Shape Interaction

Cancel



# Parsing Requirements

Correct	0	1
Prompt Used	0	1
Timer	10 seconds	
Shape Interactions		
Translation		
Rotation (30deg) & Translation		
Highlight Types		
Color Overlay	Reveal	
Color Outline	Disappear	
Pulse		
Trace		

# Creating the audio

## SCRIPT \*


Text	Highlight SVG ID	Highlight Type	Status	Operations
Rotation test	rBlue	color overlay	Published	

### Text \*

Is this shape the longest?

This text will be converted to audio.

### Audio

 Rotation-test-1490210881.wav

Remove

Files will be added from Watson or can manually be uploaded.

### Highlight SVG ID

rBlue

Input the SVG ID for the element that should highlight when this script is read.

### Highlight Type

color overlay ▼

Select the correct highlight type when this script is read. Note: the Highlight SVG ID must be specified for this to work.

Update Script Item

Cancel

Add new Script Item

# Watson API

[ibm.com/cloud-computing/bluemix/watson](https://ibm.com/cloud-computing/bluemix/watson)



# Watson API for Drupal

- Type in text
- Save Audio

[https://github.com/AtenDesignGroup/watson\\_api](https://github.com/AtenDesignGroup/watson_api)

**@joelsteidl**

# Parsing Requirements

Correct

0

1

Prompt Used

0

1

Timer

10 seconds

Shape Interactions

Translation

Rotation (30deg) & Translation

Highlight Types

Color Overlay

Reveal

Color Outline

Disappear

Pulse

Trace

Response Interface

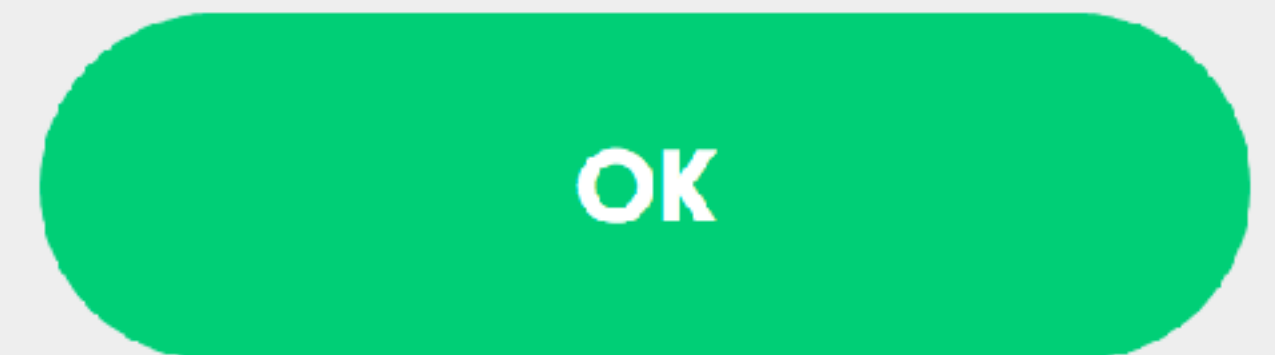
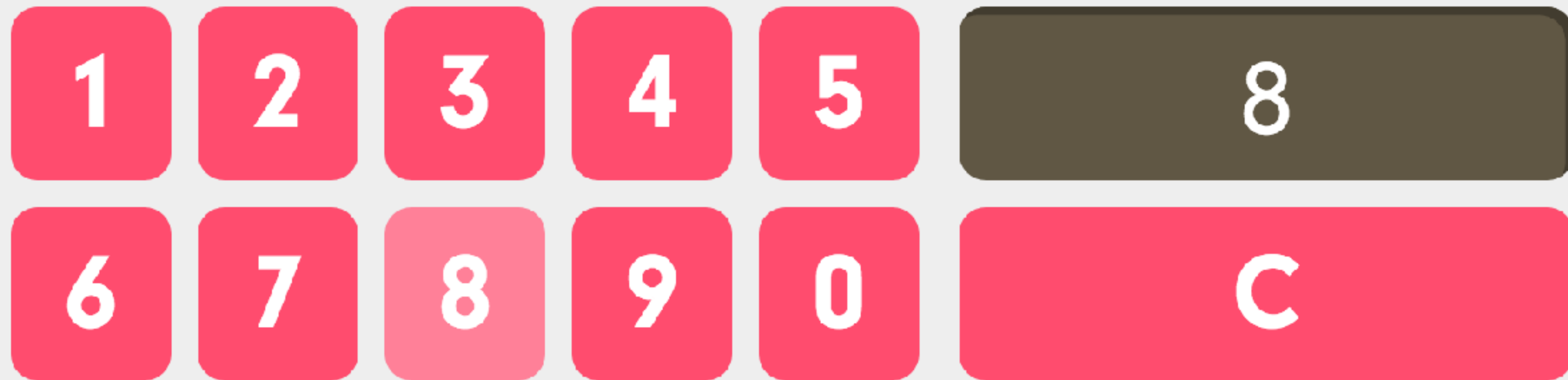
Keypad

Multiple choice (answer)

Multiple choice (object)

### Input Method

Select the input method that should be used for this testlet item.



## Input Method

multiple choice (answer) ▼

Select the input method that should be used for this testlet item.

- Green
- Orange
- Purple

**OK**

**I don't know**

# drupalSettings

Right on the page

## ANSWER OPTIONS

Show row weights

	ID	Text	Status	Operations	
↕	rG	Green	Published	Edit	Remove
↕	rO	Orange	Published	Edit	Remove
↕	rP	Purple	Published	Edit	Remove

Add new Answer Option

Correct Answer \*

rG ▼

```
ui: "multiple choice (answer)",
answerOptions: [
  { id: "rG", text: "Green", audio: "public://answer-option-audio/Green.wav" },
  { id: "rO", text: "Orange", audio: "public://answer-option-audio/Orange.wav" },
  { id: "rP", text: "Purple", audio: "public://answer-option-audio/Purple.wav" }
]
```

```
id: "Example Testlet 4",  
asset: "public://ex-multiple4b.svg",  
answer: "rBlue",  
prompt: ""
```

```
shapeInteractions: [  
  {  
    id: "rRed",  
    type: "rotation (30degree increments)"  
  },  
  {  
    id: "rGreen",  
    type: "rotation (30degree increments)"  
  }  
]
```



Loading... 100%



# Recap

- Expose config to authors
- Build reusable patterns
- Layer new features on top of solid structures



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