Name: _____

Capstone Worksheet

Elements

Fill in the tables below, identifying how you'll meet each requirement.

Multi-stage animation with at least three stages:

stage 1	
transition to stage 2	
stage 2	
transition to stage 3	
stage 3	

(for additional stages if you have them)

transition to stage 4	
stage 4	
transition to stage 5	
stage 5	

What is the end result or goal? Answer: _____

(continued on the next page)

have a way to reset or repeat the animation	
a drawing function parameter for something other than position	
how you'll use... ...an ellipse	
...a rectangle	
...a line	
...an arc	
...a triangle	
...a quad	

(continued on the next page)

four different compound things	
two different compound things that occur at least twice	
two instances of a compound thing that are animated or interactive in different ways, and how each is animated/interactive	
interaction – something tied to or influenced by the mouse position	
interaction – event handler	

(continued on the next page)

four things animated in different ways	
two animated properties that aren’t position	
acceleration and/or deceleration	
constrained motion using parametric equations	
smooth random motion using Perlin noise	

(continued on the next page)

two instances of on-the-spot decisions	
two instances of prior happenings decisions	
a repeat-as-long-as loop	
a counting loop	
a single loop with multiple variables	
multiple loops one after the other	
nested loops	
a bunch of things animated in a similar way using arrays	
topics	

Animation

You are encouraged to complete the animation questions for every animated thing, but only one set of answers is required.

What's the animated thing? Answer: _____

what changes?	what kind of value?	what's the starting point?	how does the value change?

Draw the animated thing below. Determine positions and sizes for the shapes in terms of the animation variable(s) you identified above – identify the values you need, label what you know (including the "what changes?" things), and work things out from there.

Drawing Functions

You are encouraged to complete the animation questions for each drawing function, but only one set of answers is required.

What is being drawn? Answer: _____

what differs from one copy to the next?	how is it drawn?

What are the specific values for the “what differs” things for each instance?

what differs?	value for instance 1	value for instance 2

Conditionals

Two columns are provided so there is space for two decisions. You are encouraged to complete the conditionals questions for every decision, but only one set of answers is required.

what happens differently, or only sometimes?		
what are the alternatives?		
how do we decide between them?		
on the spot or prior happenings?		

(continued on the next page)

Identify additional elements of the conditionals pattern – fill in the table(s) below that corresponds to the applicable pattern.

on-the-spot	is “do nothing” an option?		
	when does each alternative occur?		

prior happenings	what is the decision about?		
	how many alternatives are there?		
	is “do nothing” an option?		
	which alternative do we start with?		
	for each alternative, when do we change to that alternative?		

If you identified either decision as an instance of the prior happenings pattern, also fill in the following table.

prior happenings	what type will the state variable be?		
	identify the values you will use and their meanings		

Loops

You are encouraged to complete the loop questions for each loop, but only one set of answers is required.

What's the loop drawing? Answer: _____

single loop, multiple loops one after another, or nested loops?	
if multiple loops or nested loops, what are the groups?	

what is repeated?		
what changes from one repetition to the next? (be specific!)		
how do things start?		
how do things change?		
when do you keep going?		
is this a counting loop or a repeat-as-long-as pattern?		

Arrays

Which animation variables will need to become array variables?

Answer: _____

Identify the following chunks of code in your sketch:

- the initialization of each animation variable that becomes an array variable
- drawing the thing
- updating the animation variables for the thing