**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Updated 2017

**This part is due on: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Assignment 4: Appendages and Spheres**

**TIER A**

1. Add 2 appendages to your creature.
	* They should be 2 identical cylinders
2. Scale your cylinder on your calculation sheet. (6 pts.)
	* Use your scale factor
	* Make proportions for height and width and solve.
3. Draw your appendages to scale on your drawing.
4. Find:
	* Surface Area of cylinder (on creature, not drawing) (4 pts.)
* Use formula: $2πr^{2}+2πrh$
	+ Volume of cylinder (on creature, not drawing) (4 pts.)
* Use formula: $πr^{2}h$
	+ Write SA=\_\_\_\_\_ and V=\_\_\_\_\_ on your drawing
1. Add one sphere to your creature.
2. Scale by using diameter. Get diameter by measuring circumference. Show your proportions on your calculation sheet.
3. Draw the sphere as a circle on your drawing.
4. Calculate circumference and area of your circle. Do this on your calculation sheet.
5. Write C=\_\_\_\_\_\_ and A=\_\_\_\_\_\_ on your drawing.
6. Calculate volume of your actual sphere
	* Use formula: $\frac{4}{3}πr^{3}$
7. Add 2 identical size circles to your creature. (Examples of what can be used: bottle lids, rings, coins, and buttons.)
8. Scale the circles by measuring diameter. Show your work on calculation sheet.
9. Add scaled circles to your drawing. Label them circle 1, circle 2.
10. Find the circumference and area of your circle on your drawing. Show your work on the calculation sheet.

Then write these on your drawing C=\_\_\_\_\_\_ and A=\_\_\_\_\_\_

1. Slide: (3 pts.)
	* Arrows to appendages labeling them.
	* Arrows to circles labeling them.
	* Highlights and hardships.

Calculation Sheet

|  |  |
| --- | --- |
|  Appendage 1 3D shape is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Height=\_\_\_\_\_\_\_\_\_ Width=\_\_\_\_\_\_\_\_\_\_\_Proportions: Height Width  |   |

|  |  |
| --- | --- |
| Volume of cylinder: Formula:  | Surface Area of cylinder: Formula: |
| SphereDiameter=Circumference=Scale - Proportions | Sphere Volume:Formula: |
| CirclesDiameter of actual circle:Scale (use the diameter) and proportions:Circumference calculations: |  |