

Name: _____

Community _____

Math 7/Science Checklist: Q4 Weeks 1 & 2 - April 9th-20th

Big Ideas:

<p align="center">Math:</p> <input type="checkbox"/> Properties of Triangles <input type="checkbox"/> Perimeter and Circumference of Circles	<p align="center">Science:</p> <input type="checkbox"/> Resource Use <input type="checkbox"/> Population Factors <input type="checkbox"/> Symbiotic Relationships
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Upcoming Dates:

<u>Week 1</u>	<u>Week 2</u>
<input type="checkbox"/> 4/12: Renewable and Nonrenewable Resources Lab <input type="checkbox"/> 4/13: Math Test Corrections Due (___%)	<input type="checkbox"/> 4/18: GMO Debate (___%) AND Early Release Day <input type="checkbox"/> 4/20: All W1-W2 work due AND Science Study guide due!

Shelfwork: Show All Work. Explore work is to be checked against the control and then marked complete. Complete individually unless noted with a "G"

Lesson	Explore	Expand	Extend
<input type="checkbox"/> Resource Use (in class video) <input type="checkbox"/> #1 Lesson check in 4/9	<input type="checkbox"/> World Population Video with Analysis (___✓, M, 0) <input type="checkbox"/> Pre-Lab: Handout #1 (Energy Resources) and #2 (US Energy Consumption) (G) (___✓, M, 0)	<input type="checkbox"/> Renewable and Nonrenewable Resources Lab (Wednesday 4/12)(___%)	<input type="checkbox"/> Calculating Your Carbon Footprint (___%) <input type="checkbox"/> Choice Extension Proposal (___%)
Monday's work plan: (Add missing works from last checklist)		Tuesday's work plan:	
Time Estimate:		Time Estimate:	
<input type="checkbox"/> HW Triangles video <input type="checkbox"/> #2 Lesson Check-In 4/10	<input type="checkbox"/> Spaghetti Triangles (G) (___✓, M, 0) <input type="checkbox"/> Triangle Angle Investigation (___✓, M, 0) <input type="checkbox"/> Always, Sometimes, Never Card Sort (G)(___✓, M, 0)	<input type="checkbox"/> purple book p. 271 & 272(___%) OR <input type="checkbox"/> Angles in a Triangle I.G. (___%)	Choose one: <input type="checkbox"/> Angles assessment (___%) <input type="checkbox"/> Choice Discovery Ed. Unit 10 Apply (___%) <input type="checkbox"/> Choice Green Product (___%)
Wednesday's work plan:		Thursday's work plan:	
Time Estimate:		Time Estimate:	
<input type="checkbox"/> HW Missing Angle Videos <input type="checkbox"/> #3 Lesson Check-in 4/11	<input type="checkbox"/> Triangle Mania! (___✓, M, 0) <input type="checkbox"/> Triangle Sum & Exterior Angle (___✓, M, 0) <input type="checkbox"/> Angles and Solving Equations Practice(___✓, M, 0)	<input type="checkbox"/> purple book p. 261 & 262(___%)	Choose one: <input type="checkbox"/> Angles assessment (___%) <input type="checkbox"/> Choice Discovery Ed. Unit 10 Apply (___%) <input type="checkbox"/> Choice Green Product (___%)
Friday's work plan:		Monday's work plan:	
Time Estimate:		Time Estimate:	


<input type="checkbox"/> HW Circles Video <input type="checkbox"/> #4 Lesson Check-in 4/16	<input type="checkbox"/> Circles Task Cards (___√,M,0) <input type="checkbox"/> Perimeter, Circumference and Area 1-4 (___√,M,0) AND <input type="checkbox"/> Decorating w/ Circles (___√,M,0) OR <input type="checkbox"/> Colorful Pi! (___√,M,0)	<input type="checkbox"/> purple book p. 293 &294 (___%) OR <input type="checkbox"/> Area Worksheet AND Perimeter and Circumference Worksheet (Odd letters, every other letter)	<input type="checkbox"/> Choose one: <input type="checkbox"/> Choice Discovery Ed. Unit 11 Apply (___%) <input type="checkbox"/> Choice Green Product (___%)
Tuesday's work plan: Time Estimate:		Wednesday's work plan: Time Estimate:	
<input type="checkbox"/> Population Factors (Ecosystem balance) <input type="checkbox"/> #5 Lesson Check-In 4/17	<input type="checkbox"/> Max the Bear Story and Card Sort (G) (___√, M, 0) <input type="checkbox"/> Yellow Perch in Lake Winnipeg Analysis (G) (___√, M, 0)	<input type="checkbox"/> Product showing difference between abiotic/biotic factors and density dependent/density independent factors-see rubric (___%)	<input type="checkbox"/> Choose one: <input type="checkbox"/> Calculating Your Carbon Footprint (___%) <input type="checkbox"/> Choice Extension Proposal (___%)
Thursday's work plan: Time Estimate:		Friday's work plan: Time Estimate:	
<input type="checkbox"/> Symbiotic Relationships <input type="checkbox"/> #6 Lesson Check-In 4/19	<input type="checkbox"/> Symbiotic Relationships Card Sort with Analysis-choose 3 of each type to record and explain how to tell the difference between each type of relationship. (___√, M, 0)	<input type="checkbox"/> Product/shelfwork illustrating the difference in the three types of symbiotic relationships - see rubric (___%)	<input type="checkbox"/> Choose one: <input type="checkbox"/> Calculating Your Carbon Footprint (___%) <input type="checkbox"/> Choice Extension Proposal (___%)
Monday's work plan: Time Estimate:		Tuesday's work plan: Time Estimate:	

Homework: (All HW assignments are to be done independently and are due the next day unless noted):

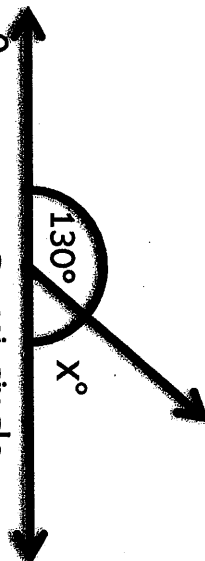
- Monday 4/9: **Properties Of Triangles** videos on EdPuzzle with guided notes
- Tuesday 4/10: **Find The Missing Angle Equations** videos on EdPuzzle with guided notes
- Wednesday 4/11: Review and organize binder and complete missing work as needed
- Thursday 4/12: **Perimeter And Circumference and Area Of Circles** videos with guided notes on EdPuzzle.
- Friday 4/13: Review and organize binder and complete missing work as needed
- Monday 4/16: **Population factors (Ecosystem balance)** video with graphic organizer on EdPuzzle
- Tuesday 4/17: videos on EdPuzzle with guided notes.
- Wednesday 4/18: **Symbiotic relationships** video with graphic organizer on EdPuzzle
- Thursday 4/19: Review and organize binder Review Study Guide and EdPuzzle videos
- Friday 4/20: Review and organize binder Review Study Guide and EdPuzzle videos

Lesson Requests:

More Important Symbols

A  on a straight line indicates the line is _____.

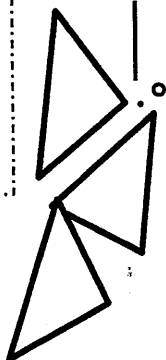
These two angles are called _____

A  indicates the _____ of two angles is _____.

$$x + 130 = 180$$

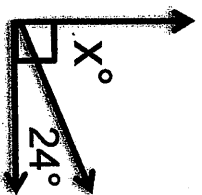
Finding Missing Angles in Triangles

1. _____ the measures of the known angles.
2. Subtract the sum from _____.



Important Symbols

A square inside the angle indicates a _____ angle of _____.



A square inside an angle indicates the _____ of two angles is _____.

These two angles are called _____

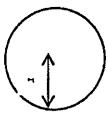
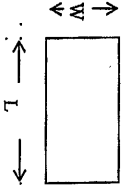
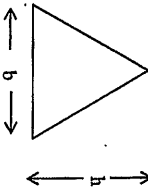
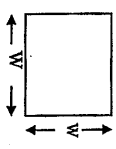
Hint - set up a one step equation to find the missing angle

$$x + 24 = 90$$

AREA

Perimeter, Circumference and Area **MA3.20**

What is area? the size of a space usually enclosed by a perimeter
 Note: measurements are in units squared

Shape	Formula	Example
 Circle	$A = \pi r^2$	$r = 1 \text{ m}$ $A = 3.14 (1\text{m})^2 = 3.14 \text{ m}^2$
 Rectangle	$A = LW$	$L = 5 \text{ cm}$ $W = 3 \text{ cm}$ $A = 5 \text{ cm} \times 3 \text{ cm} = 15 \text{ cm}^2$
 Triangle	$A = \frac{1}{2}bh$ any side of a triangle can be the base	$b = 1 \frac{1}{2}\text{ft}$ $h = 2 \text{ ft.}$ $A = \frac{1}{2} (1 \frac{1}{2}\text{ft.}) (2 \text{ ft.}) = 1 \frac{1}{2} \text{ ft}^2$
 Square	$A = W^2$	$W = 5 \text{ cm}$ $A = 25 \text{ cm}^2$

Others

- divide any large area into smaller areas of these shapes
- sum the shapes of the small areas to find the size of the original area
- subtracting areas from a larger area can also work for some problems

T. Bernard/2004



DOUGLAS COLLEGE

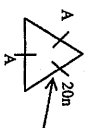
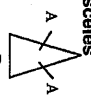
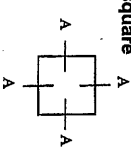
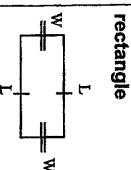
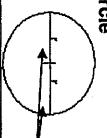
Learning Centre

Perimeter, Circumference and Area **MA3.20**

PERIMETER, CIRCUMFERENCE and AREA

Perimeter: the distance around an object or sum of it's sides

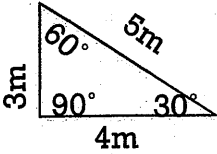
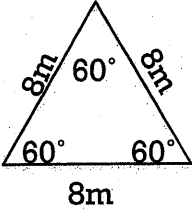
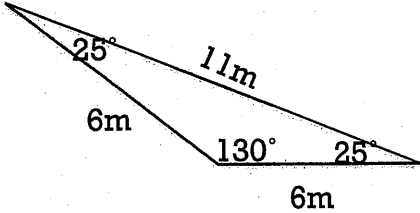
Circumference: the distance around a circle

Shape	Sides	Formula	Example
 triangles: equilateral	3 equal <i>slashes indicate sides of equal length</i>	$P = 3A$	if $A = 4$ then $P = 3(4) = 12$
 isosceles	2 equal 1 other	$P = 2A + B$	if $A = 5$ and $B = 2$ then $P = 2(5) + 2 = 12$
 square	4 equal	$P = 4A$	if $A = 3$ then $P = 4(3) = 12$
 rectangle	2 pairs of sides of different length & width	$P = 2W + 2L$ or $P = 2(W+L)$	if $W = 2$ and $L = 5$ then $P = 2(2) + 2(5) = 14$
 circle	$r = \text{radius}$ $d = \text{diameter}$ $d = 2r$	$C = 2 \pi r$ $= \pi d$	if $r = 3$ then $C = 2(3.14)(3) = 18.84$

T. Bernard/2004

Properties of Triangles Notes

Name _____

Triangle	Sides	Angles
		
		
		

Triangle Inequality Theorem: The _____ of any two sides of a triangle must be _____ than the third side.

Triangle Sum Theorem: The sum of the interior angles of a triangle add up to _____.

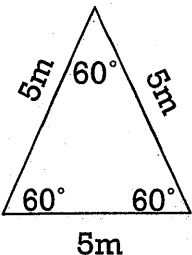
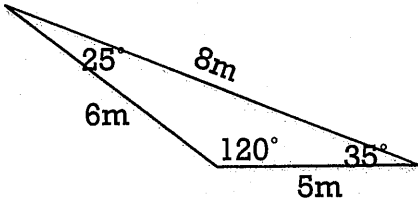
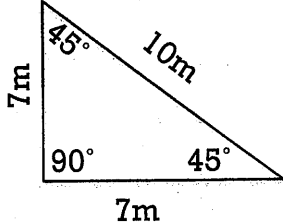
Naming Triangles by their...

SIDES	ANGLES
Equilateral:	Right:
Isosceles:	Acute:
Scalene:	Obtuse:

Determine if you can make a triangle given the dimensions. STATE WHY OR WHY NOT.

1) Side Measurements: 4cm, 6cm, 7cm	Angle Measurements: 30°, 60°, 90°
2) Side Measurements: 5cm, 3cm, 10cm	Angle Measurements: 35°, 65°, 80°
3) Side Measurements: 14cm, 6cm, 9cm	Angle Measurements: 25°, 75°, 90°

Classify each triangle by its sides and angles.

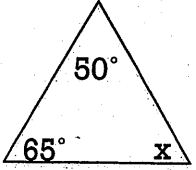
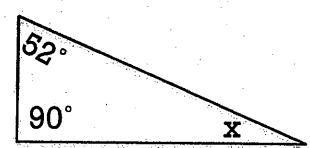
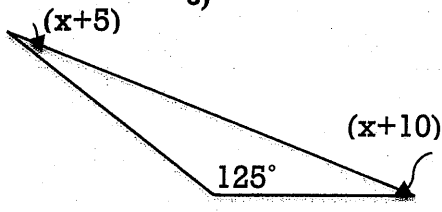
		
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Finding the Missing Angle of Triangles Notes

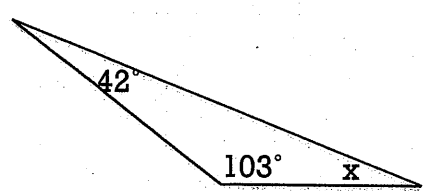
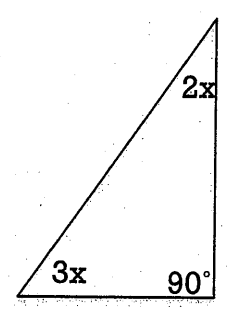
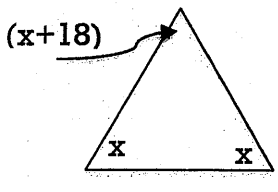
Name _____

Triangle Sum Theorem: The sum of the interior angles of a triangle add up to _____.

We can use this knowledge to determine the missing measures of a triangle. (Not drawn to scale)

<p>1)</p> 	<p>2)</p> 	<p>3)</p> 
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Find the MEASURE of the missing angles:

		
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Perimeter and Circumference Notes

Name _____

To find the perimeter of a polygon, you _____

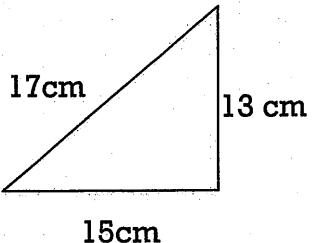
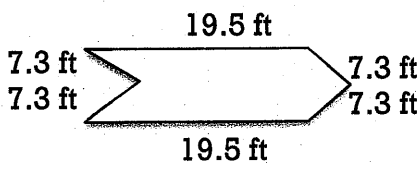
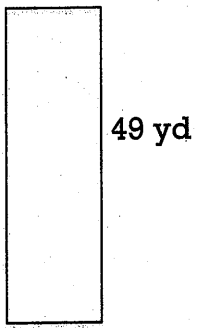
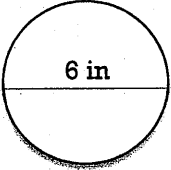
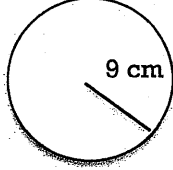
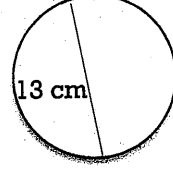
The formula for the perimeter of a rectangle is _____

Circumference is _____

The formula for the circumference of a circle is _____

For _____ you can use _____ or _____

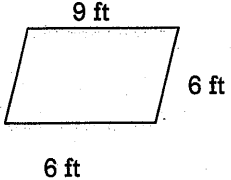

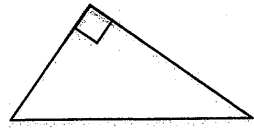
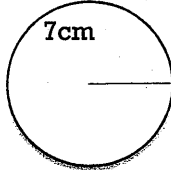
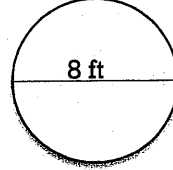
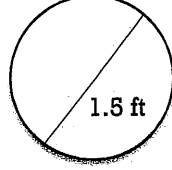
Example: Find the area of each circle. Use 3.14 for π

<p>1.</p> 	<p>2.</p> 	<p>3.</p> 
<p>4.</p> 	<p>5.</p> 	<p>6.</p> 



Pause the video and try these on your own!

Then press play and check your answers with a color pen.

<p>1.</p> 	<p>2.</p> 	<p>3.</p> 
<p>4.</p> 	<p>5.</p> 	<p>6.</p> 

Area of Circles Notes

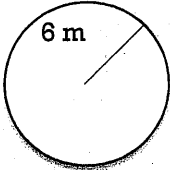
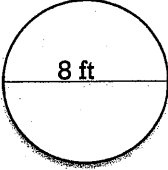
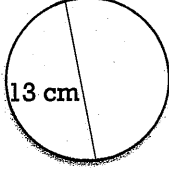
Name _____

Formula for the area of a circle: _____

“**r**” stands for _____, which is _____ of the _____.

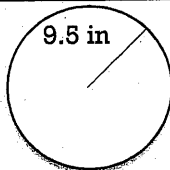
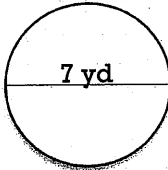
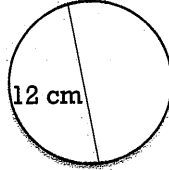
“_____” can be expressed as _____ or _____. Make sure you read the directions to see which you should use.

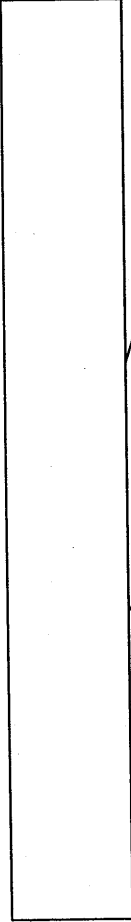
Example: Find the area of each circle. Use 3.14 for π

<p>1. </p> <p>Shape: Formula: Substitute: Solve:</p> <p style="text-align: right;">Units</p>	<p>2. </p> <p>Shape: Formula: Substitute: Solve:</p> <p style="text-align: right;">Units</p>	<p>3. </p> <p>Shape: Formula: Substitute: Solve:</p> <p style="text-align: right;">Units</p>
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**Pause the video and try these on your own!
Then press play and check your answers with a color pen.**

<p>1. </p> <p>Shape: Formula: Substitute: Solve:</p> <p style="text-align: right;">Units</p>	<p>2. </p> <p>Shape: Formula: Substitute: Solve:</p> <p style="text-align: right;">Units</p>	<p>3. </p> <p>Shape: Formula: Substitute: Solve:</p> <p style="text-align: right;">Units</p>
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Ecosystem Interactions:

- 1.
- 2.
- 3.

Energy Flow in an Ecosystem:

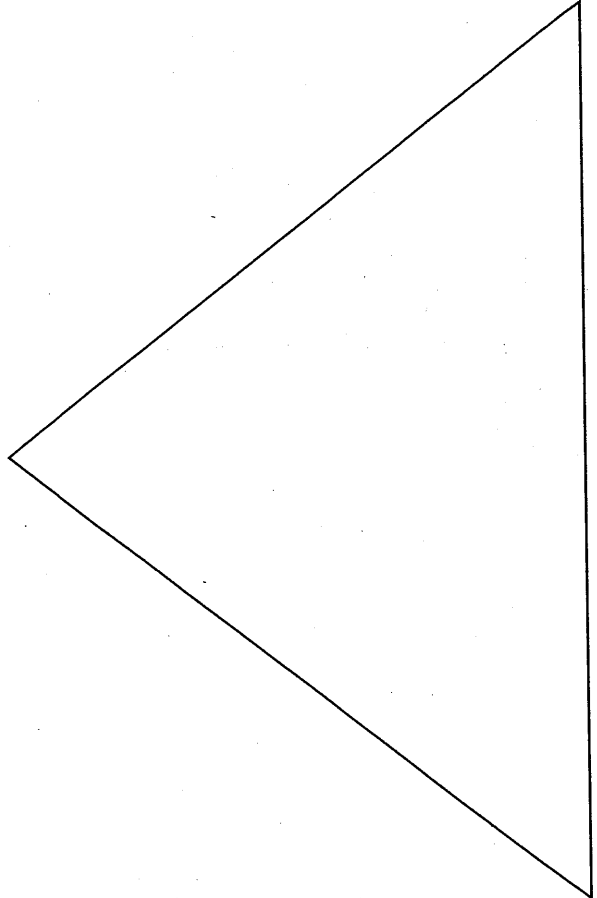
- 1.
- 2.
- 3.

Stable Ecosystems:

- 1.
- 2.
- 3.

Organisms in each trophic level:

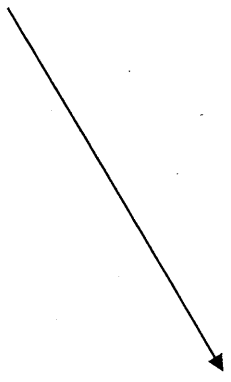
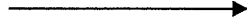
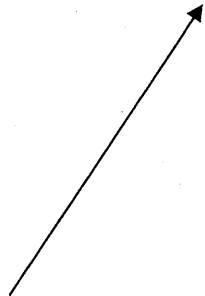
Niche:



Ecological Pyramids

Ecological Pyramids:

- 1.
- 2.



Number Pyramids:

- 1.
- 2.

Biomass Pyramids:

- 1.
- 2.
- 3.

Energy Pyramids:

- 1.
- 2.
- 3.
- 4.

Symbiotic Relationships:

Mutualism:

Drawing:

Examples:

Commensalism:

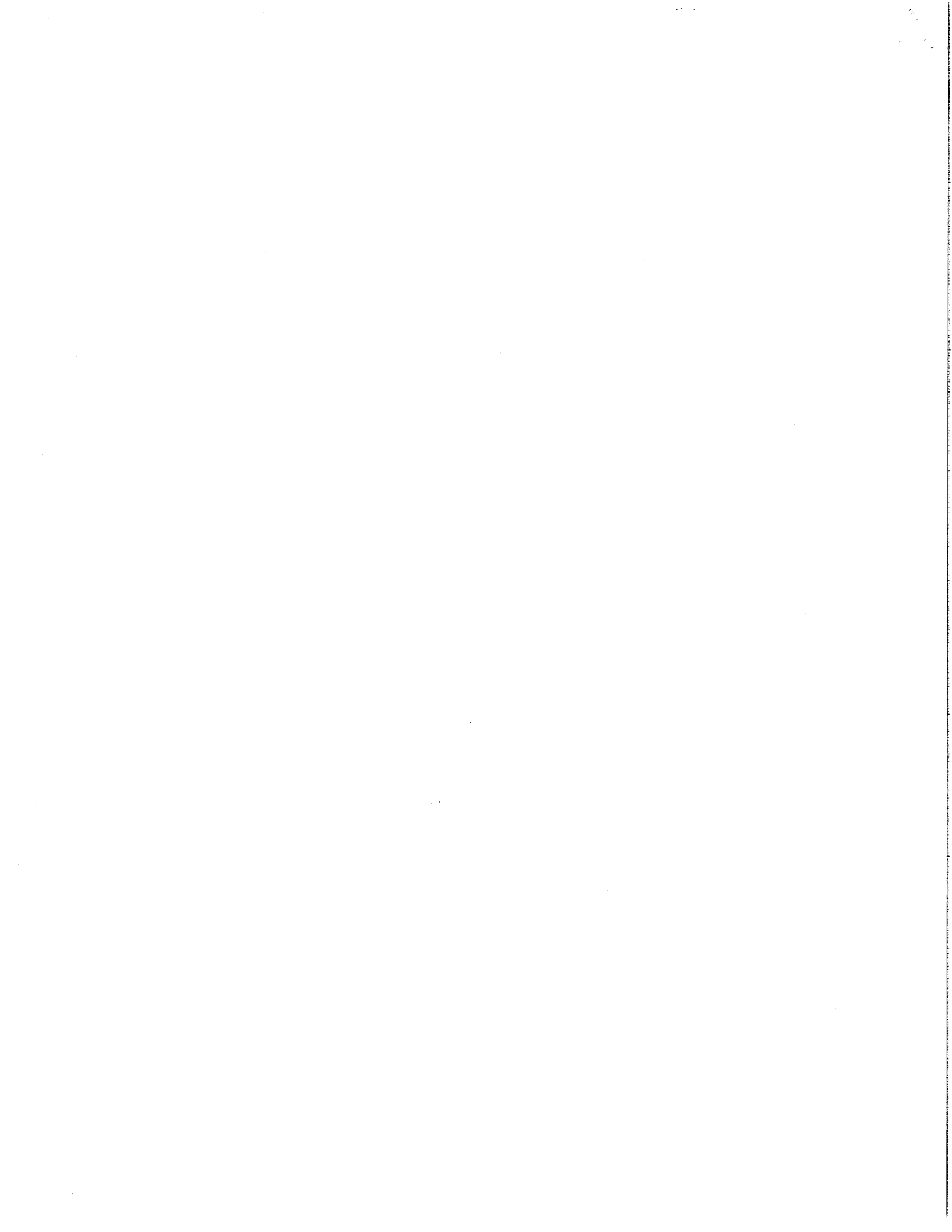
Drawing:

Examples:

Parasitism:

Drawing:

Examples:



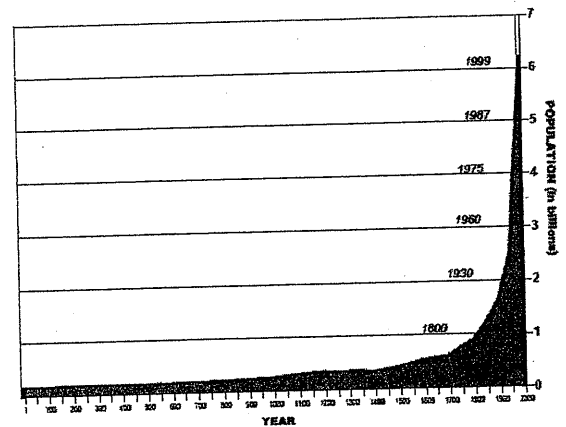
Over 7 Billion People!!

Population Connection's World Population Video:

1. What do the dots on the map represent?
2. How does the appearance of dots on the map change as the movie progresses?
3. At about what year does the rapid change in the amount of dots first occur?
4. What developments on Earth are most likely responsible for the increase in population at that time?
5. How do you feel as the video concludes with population projections into the future?
6. What is the main idea of the video?
7. When does a population grow in size (are birth or death rates usually the more important factor)? Give reasons for your answer.
8. What other questions do you have after seeing the video?

World Population Graph:

1. The line in the graph is called a "j" curve, why do you think that is?
2. What do you think the shape of the graph tells us about population growth?
3. What would a straight line indicate about population growth?
4. When did human population "round the bend" of the J-curve?
5. What technological advances were probably most responsible for this growth occurring?



Compare and contrast the Video and Graph. All show the very same data!

1. In your opinion, which has the greatest impact: video or line graph?
2. How does each show the same data?
3. What are the three most important things one can learn from the data on population growth through time?
4. **Explore:** Brainstorm a list of possible effects associated with increasing world population.

7 Billion People!

For most of human history, our population grew slowly. The Industrial Revolution brought advances agriculture, sanitation, and medicine lowered our death rate as people lived longer, and these advances started the population explosion. Human population growth since the Industrial Revolution has been exponential and rapidly increasing.

Technologies related to food production, sanitation, and disease prevention have dramatically increased life expectancy and changed the way people live and work in the last 150 years. Such changes have resulted in rapid increases in human population, consumption of natural resources, and environmental degradation.

In 1800, our population reached 1 billion. In 1930 we reached 2 billion; it took 130 years to add that second billion. Earth's population reached 4 billion in 1960, doubling in only 44 years. At current annual growth rate of 1.4% the earth's population of over 6 billion is expected to double again in 50 years.

Population is highly concentrated with two-thirds of earth's population living in only ten countries. Population growth in richest countries has stabilized. Most rapid rates of increase are in Africa and other third world countries of Asia and South America.

What will be the effect of population growth? How will the number of people affect environment, economy, and society? Consider the following:

Waste Disposal:

More people = increasing amounts of solid and toxic waste and pollutants

Food Supplies:

More people = less fertile land available for food production.
Malnutrition from lack of food is a problem in third- world countries.

Resource Availability:

Many of the earth's resources such as minerals and fossil fuels are limited. Even trees are being used faster than they can be replaced.

Name: _____

Symbiotic Relationships Product Rubric

Directions: You will choose a product to create that includes all criteria listed below:

Type of Product (poster, etc): _____

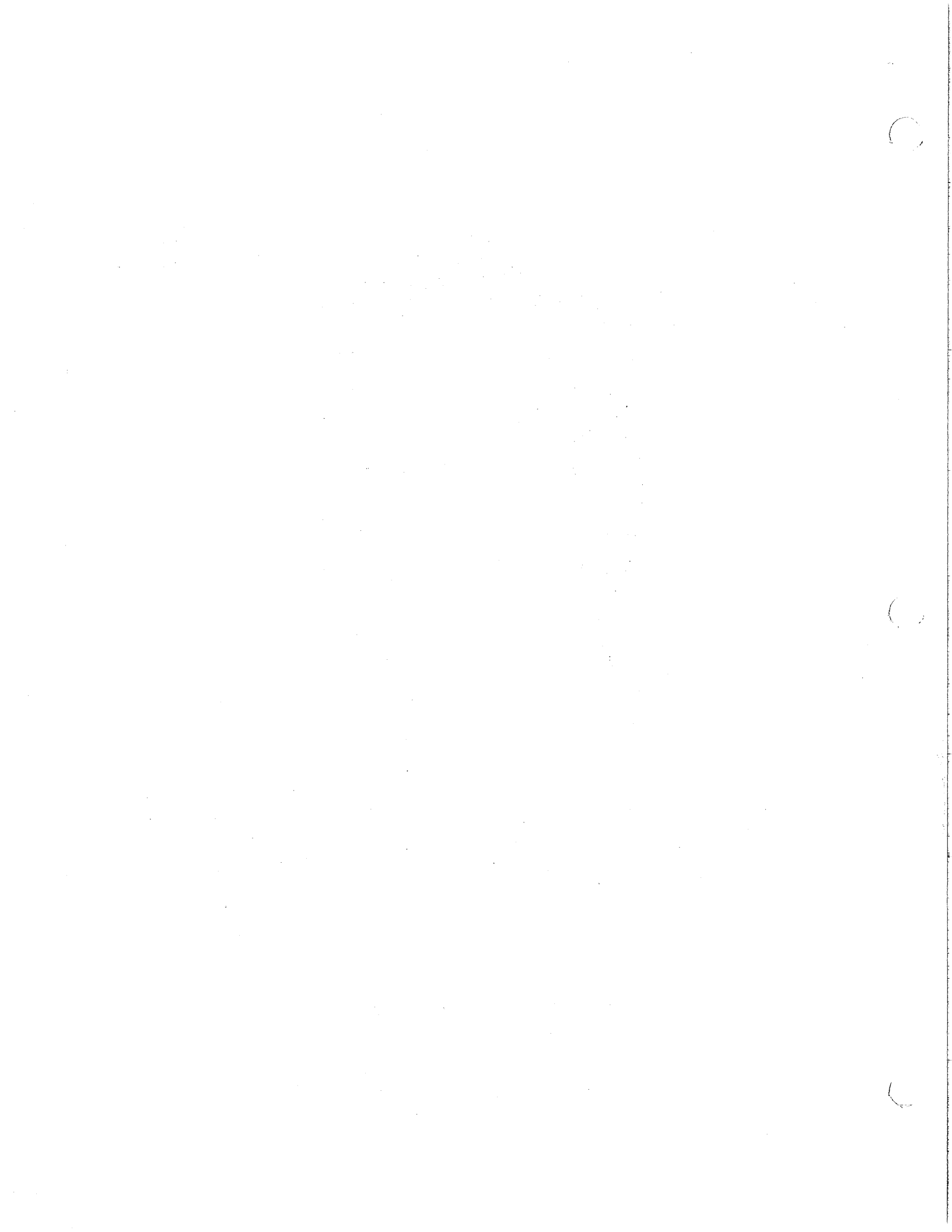
Suggestions (Areas that Need Work)	Criteria (Standards for this work)	Compliments (Areas that Exceed Criteria)
	Criteria #1: Definitions and Examples <input type="checkbox"/> Provides a definition of each type of symbiotic relationship (mutualism, commensalism, and parasitism) (6) <input type="checkbox"/> Provides 3 examples of each (18) Student: _____/(24) Teacher: _____/(24)	
	Criteria #2: At William Montessori! <input type="checkbox"/> Create three examples representing each type of relationship of something found on campus! (6) Student: _____/(6) Teacher: _____/(6)	
	Criteria #3: Organization and Neatness <input type="checkbox"/> Product is neat/easy to understand (2) <input type="checkbox"/> Product is visually appealing, not rushed and neat (2) Student: _____/(4) Teacher: _____/(4)	

Student Total: _____/34 Teacher Total: _____/34

Reflection:

1. Justify the grade you gave yourself-discuss specifics from the rubric.

2. Discuss one thing you loved about this work, and one you would improve.

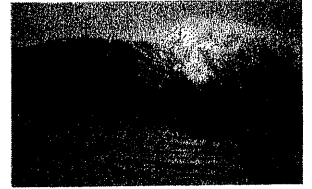


Handout #1- Energy Resources

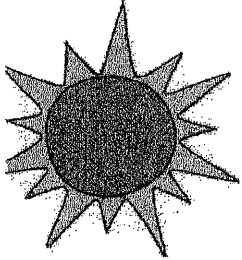
Label the energy resources below as renewable or nonrenewable:



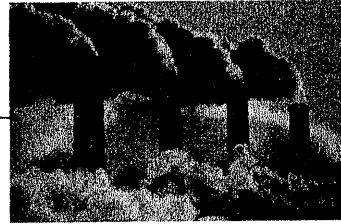
1. Water: _____



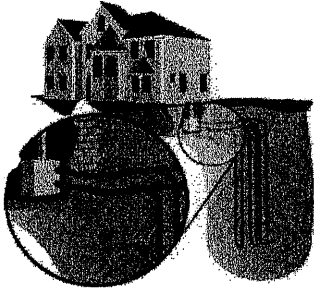
2. Wind: _____



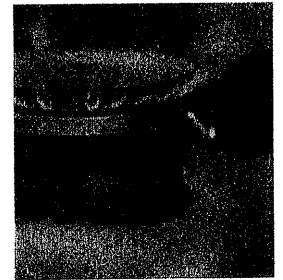
3. Fossil Fuels: _____



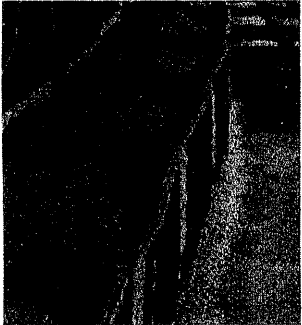
4. Solar: _____



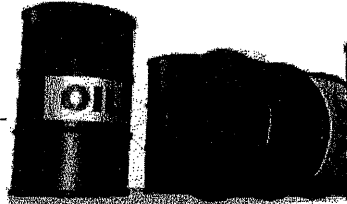
5. Natural Gas: _____



6. Geothermal: _____



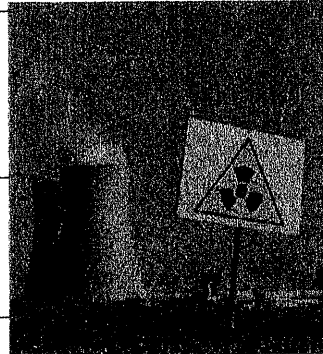
7. Petroleum: _____



8. Coal: _____

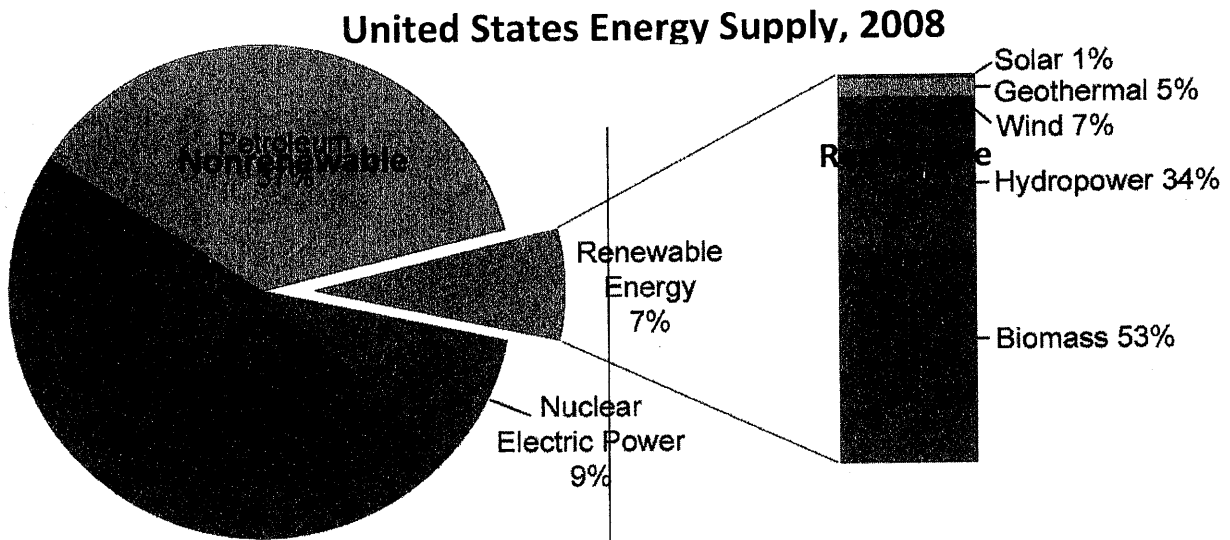


9. Nuclear Power: _____



10. Biomass from plants: _____

Handout #2- United States Energy Consumption



1. Sort the energy resources the US uses into renewable and nonrenewable energy resources:

•	•
•	•
•	•
•	•
	•

2. What percentage of the US energy supply comes from nonrenewable resources? Renewable?

Show your work:

Nonrenewable Resources: _____ %

Renewable Resources: _____ %

3. What resource does the US use for most of its energy?
4. What energy source did the US use the least in 2008?
5. How do you feel about this data? Was any of it surprising to you?

Data Chart #3 – Population and Consumption Rapidly Increasing (Remove 10 MORE beans each year)

	Hypothesis (Years to deplete)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
Remove 10 MORE beans each year		Remove 10 beans	Remove 20 beans	Remove 30 beans	Remove 40 beans	Remove 50 beans	Remove 60 beans	Remove 70 beans	Remove 80 beans	Remove 90 beans	Remove 100 beans		
# beans remaining in container													
% Nonrenew													
% Renew													

Total years to deplete nonrenewable resources: _____

Data Chart #4 – Your rule: _____

	Hypothesis (Years to deplete)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
		Remove beans	Remove beans	Remove beans	Remove beans	Remove beans	Remove beans	Remove beans	Remove beans	Remove beans	Remove beans	Remove beans	Remove beans
# beans remaining in container													
% Nonrenew													
% Renew													

Total years to deplete nonrenewable resources: _____

Data Charts

Data Chart #1 – No Change in Population or Consumption (Remove 10 beans each year)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
Remove 10 beans each year	Remove 10 beans	Remove 10 beans	Remove 10 beans	Remove 10 beans	Remove 10 beans	Remove 10 beans	Remove 10 beans	Remove 10 beans	Remove 10 beans	Remove 10 beans	Remove 10 beans	Remove 10 beans
# beans remaining in container												
% Nonrenew												
% Renew												

Total years to deplete nonrenewable resources: _____

Data Chart #2 – Population & Consumption Increasing (Remove 5 MORE beans each year)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
Remove 5 MORE beans each year	Remove 10 beans	Remove 15 beans	Remove 20 beans	Remove 25 beans	Remove 30 beans	Remove 35 beans	Remove 40 beans	Remove 45 beans	Remove 50 beans	Remove 55 beans	Remove 60 beans	Remove 65 beans
# beans remaining in container												
% Nonrenew												
% Renew												

Total years to deplete nonrenewable resources: _____

Name: _____

Population Factors Product Rubric

Directions: You will choose a product to create that includes all criteria listed below:

Type of Product (poster, etc): _____

Suggestions (Areas that Need Work)	Criteria (Standards for this work)	Compliments (Areas that Exceed Criteria)
	Criteria #1: Abiotic/Biotic Factors <input type="checkbox"/> Explains what each is (6) <input type="checkbox"/> Provides 3 examples of each (12) Student: _____/(18) Teacher: _____/(18)	
	Criteria #2: Density Dependent/Independent <input type="checkbox"/> Explains the difference between density dependent and density independent factors (6) <input type="checkbox"/> Provides 3 examples of each (12) Student: _____/(18) Teacher: _____/(18)	
	Criteria #3: Organization and Neatness <input type="checkbox"/> Product is neat/easy to understand (2) <input type="checkbox"/> Product is visually appealing, not rushed and neat. (2) Student: _____/(4) Teacher: _____/(4)	

Student Total: _____/40 Teacher Total: _____/40

Reflection:

1. Justify the grade you gave yourself-discuss specifics from the rubric.

2. Discuss one thing you loved about this work, and one you would improve.

