

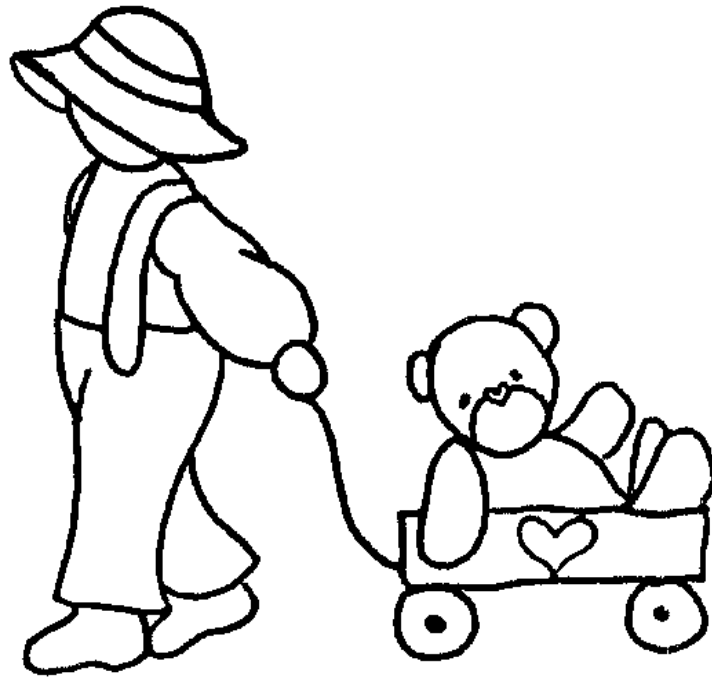


Applied Science

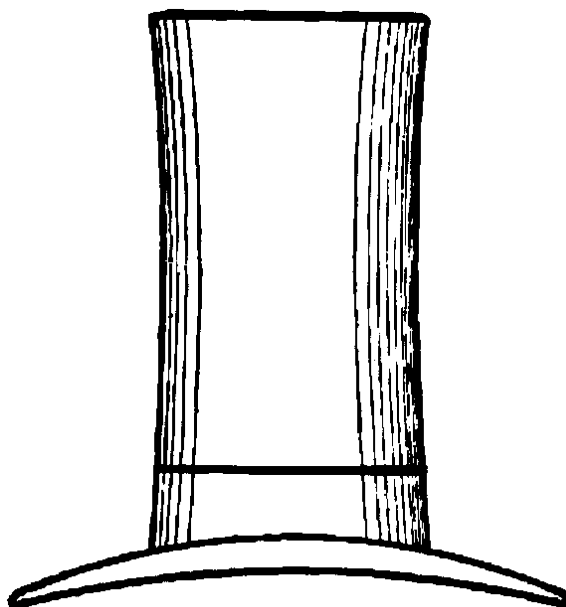
Our Technological World



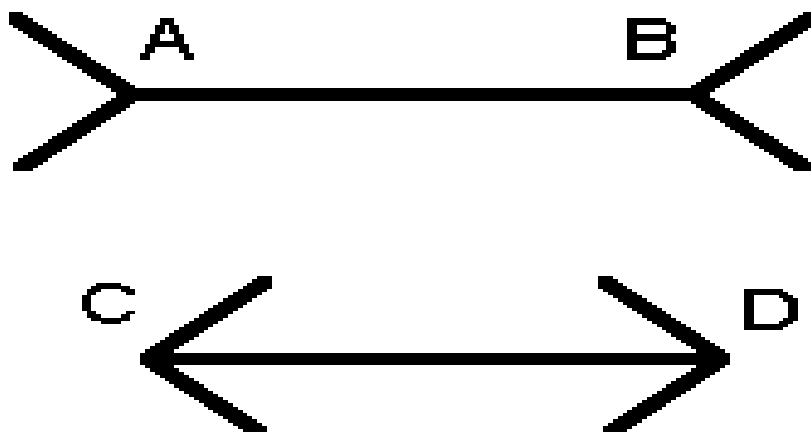
SECOND GRADE WORKBOOK



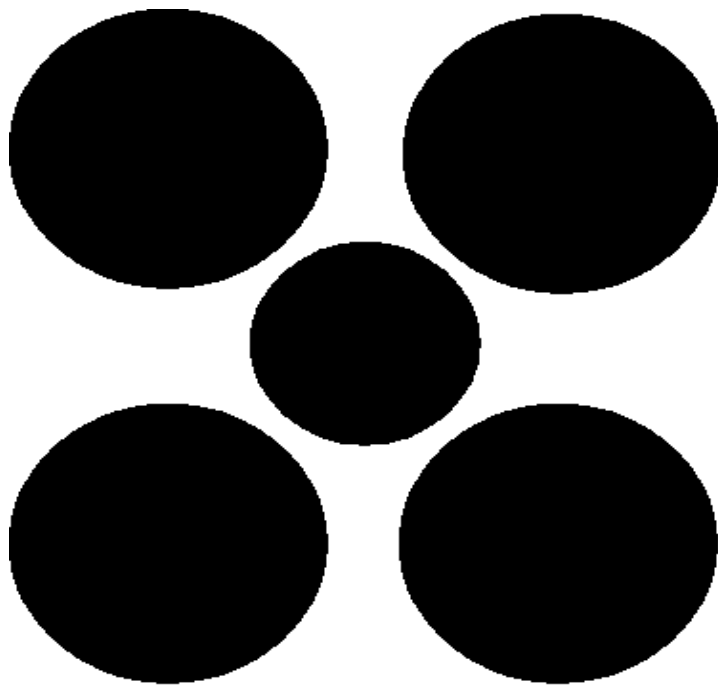
student _____



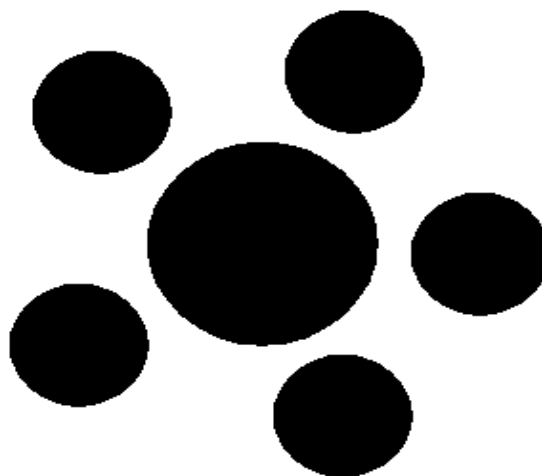
Is the hat wider or taller? Use a ruler to find the answer.
Did your eyes fool you?



Which of these lines is longer - line AB or line CD?



A.



B.

Which center circle is the largest?

APPLIED SCIENCE - SCIENCE AND MATH (2A)

PROBLEM: Is it easy to predict something about an item without experimenting with it?

PREDICTION: _____

STATION	PREDICTION	ACTUAL
1. VOLUME		
2. WEIGHT		
3. LENGTH		
4. WEIGHT		
5. LENGTH		
6. TASTE		
7. VOLUME		
8. WEIGHT		
9. LIQUID		
10. LIQUID		

CONCLUSION: How many correct predictions did you make?

VOLUME 1. WHICH ONE HAS THE MOST WATER?	WEIGHT 2. WHICH ONE IS LIGHTEST IN WEIGHT?
LENGTH 3. WHICH ONE IS LONGEST?	WEIGHT 4. WHICH ONE IS HEAVIEST?
LENGTH 5. WHICH ONE IS LONGEST?	SOUR 6. WHICH ONE IS THE MOST SOUR?
VOLUME 7. WHICH ONE HAS THE MOST WATER?	WEIGHT 8. WHICH ONE IS LIGHTEST?
LIQUID 9. WHICH ONE HAS THE MOST COLORED LIQUID?	LIQUID 10. WHICH ONE IS THE SLOWEST?

APPLIED SCIENCE - SCIENCE AND MATH (2A) POST

CLASS SCIENCE PROJECT SURVEY

Dear Parents,

We are conducting a scientific survey to determine the number of hours of television a second grader watches LAB the school week. Please help me keep track of my hours on this worksheet. Remind me to bring this completed survey back to school on Friday.

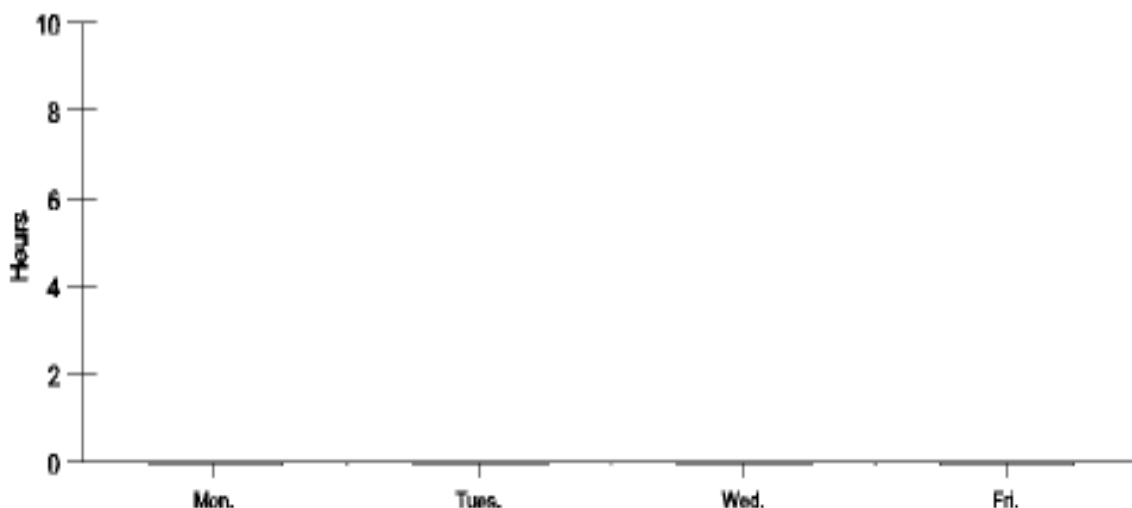
DATE BEGUN _____

DATE ENDED _____

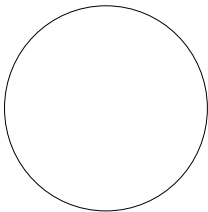
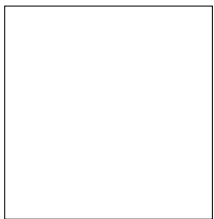
Write down how many hours of television you watch at different times of the day. Please use half hour increments.

	MORNING	AFTERNOON	AFTER DINNER	TOTAL HOURS FOR DAY
MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				
TOTAL HOURS FOR 4 DAYS				

MAKE A BAR GRAPH OF THE RESULTS



What is the difference between 2 dimensional and 3 dimensional?

DRAW THE 3D SHAPE AND NAME IT	
 CIRCLE	
 SQUARE	
 TRIANGLE	

APPLIED SCIENCE - SCIENCE AND MATH (2B)

PROBLEM: Can you make three dimensional shapes from two dimensional shapes?

PREDICTION: _____

TRACE YOUR COOKIE CUTTERS. NAME THE SHAPES YOU ARE USING.

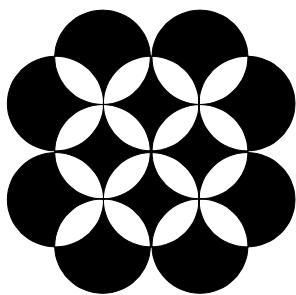
Roll out the playdough. Cut out shapes using cookie cutters. These are two-dimensional shapes. Show your teacher. After your teacher has seen the shapes, make a three-dimensional model of the shapes and draw what they look like. Have your teacher see your final shape.

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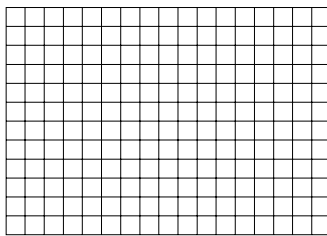
CONCLUSION: What is the difference between two dimensional and three dimensional shapes?

APPLIED SCIENCE - SCIENCE AND MATH (2B) POST

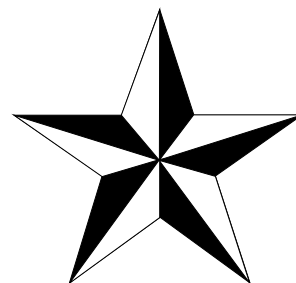
WHAT IS A UNIT CELL?



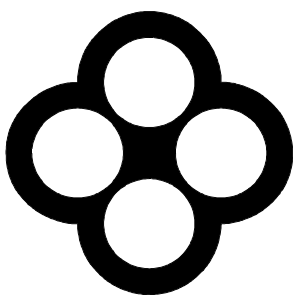
1



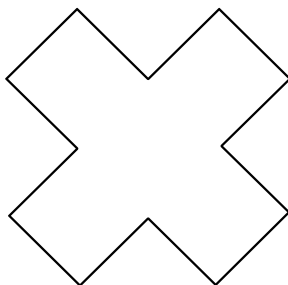
2



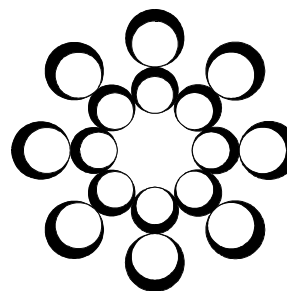
3



4



5

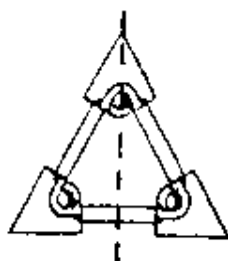


6

CREATE A PATTERN WITH ANY UNIT CELL

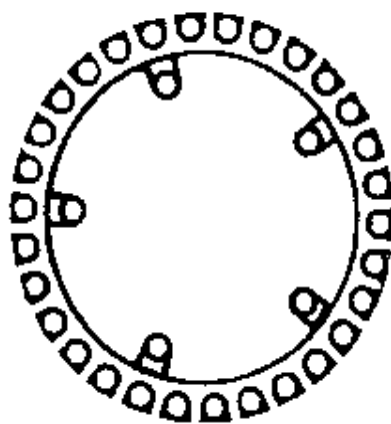
bilateral

one side looks
like other



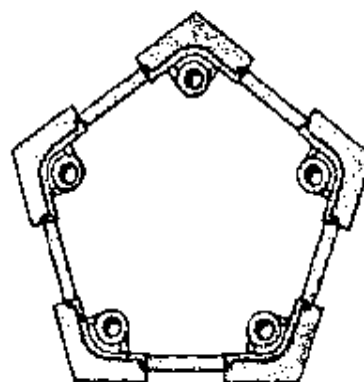
triangle frame

radial



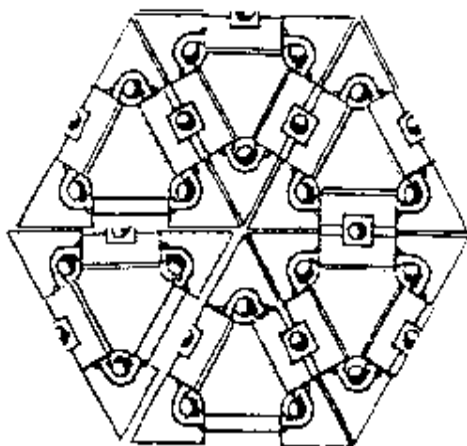
points radiate from
center
wheel frame

pentagonal

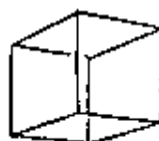


5 part
pentagonal frame

hexagonal

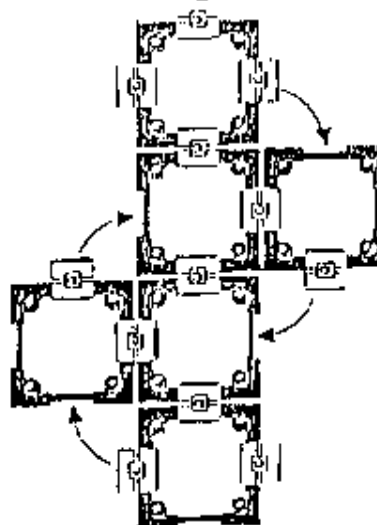


6 part
six triangle frames



cubic

6 square frames



APPLIED SCIENCE - SCIENCE AND MATH (2C)

PROBLEM: Do different organisms have different symmetries and patterns?

PREDICTION: _____

ITEM	SYMMETRY	PATTERN
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

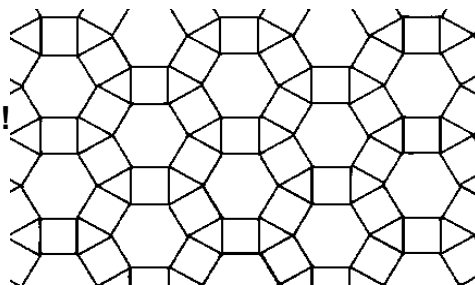
CONCLUSION: Are the patterns and symmetry of different organisms similar? Explain.

TESSELLATIONS

Think Design!

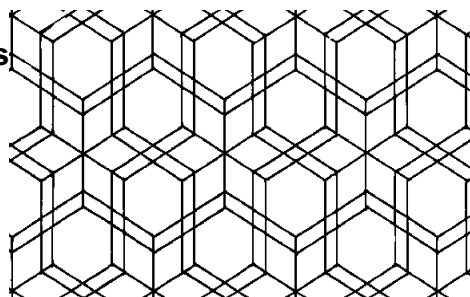
A.

1. How many different shapes are used in this design!
2. Outline the unit cell.



B.

1. How many different shapes are used in this design?
2. Outline the unit cell.



Next, see if it works using GOOGOLPLEX. You can only use triangles, squares, and pentagons. Draw your tessellation below.

CREATE A TESSELLATION

APPLIED SCIENCE - PHYSICS (3A)

PROBLEM: How can you find the north and south pole of a magnet?

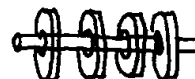
PREDICTION: _____

PROCEDURE: Go to 4 different stations and complete the assignment. Listen to your teacher give instructions.

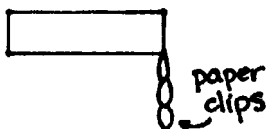
Station #1. Put a sheet of paper over the bar magnet. Sprinkle iron filings. Draw what happens. Be careful not to put the iron filings on the magnet.



Station #2. There are 4 ring magnets. Experiment with them and arrange them so they "float." See diagram. Explain why this occurs.



Station #3. There are 2 magnets with iron files all over them. Draw what happens when you slowly pull them apart. What causes this? Next try to take 1 magnet and slowly turn it to the opposite face. What happens? _____



Station #4.

How many paper clips can you pick up?

How many paper clips can you line up (see diagram)?

CONCLUSIONS: How were you able to distinguish north and south?

APPLIED SCIENCE - PHYSICS (3B)

PROBLEM: Where does static electricity occur?

PREDICTION: _____

EXPERIMENT 1.

1. Hold a plastic comb over confetti without rubbing the comb. What happens?

2. Rub a plastic comb with a piece of cloth. Hold the comb over a small pile of confetti. Did the comb "attract" or "repel" the confetti?

3. Rub the plastic rods, put it on the confetti? What happens?

EXPERIMENT 2.

1. Blow up a balloon. Without rubbing it, try and put the balloon on the wall. Does it work?

YES NO

2. Blow up two balloons. Using a piece of cloth, both partners simultaneously rub their own balloon; one for 15 seconds and the other for 30 seconds. Quickly place both balloons on the wall and time how long each one stays up.

Which balloon stayed up the longest? _____

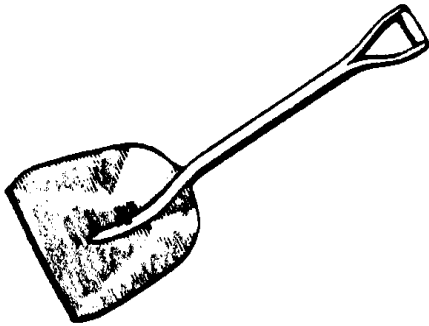
Why? _____

EXPERIMENT 3.

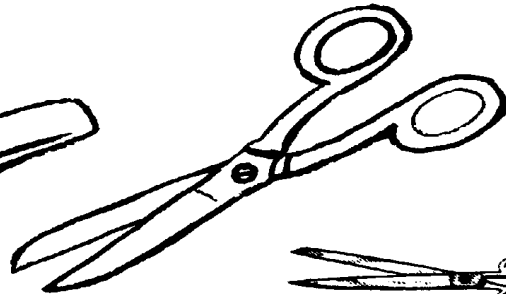
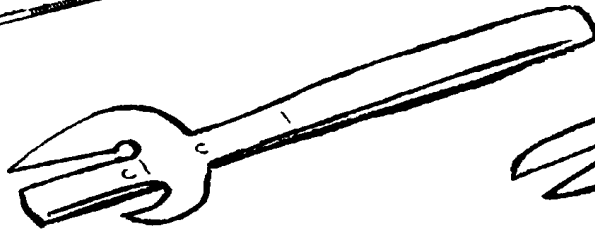
1. Rub a balloon to produce static electricity. Place one end of a fluorescent tube to the balloon. Describe what happens.

CONCLUSION: How can you create static electricity? _____

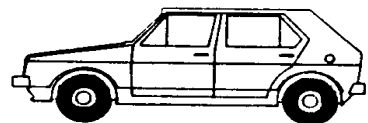
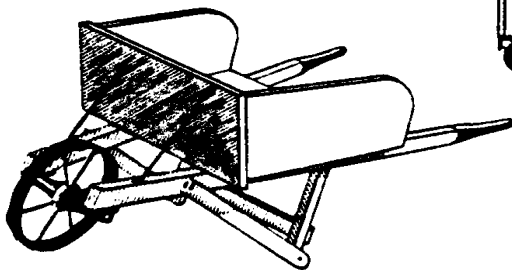
EXAMPLES OF MACHINES



INCLINED PLANE

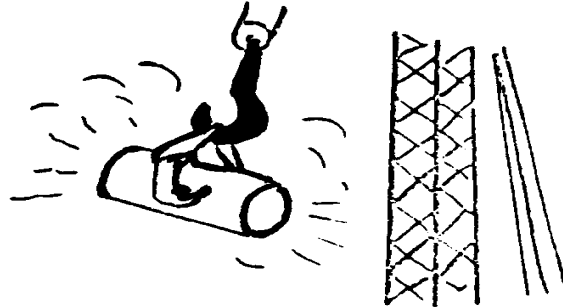
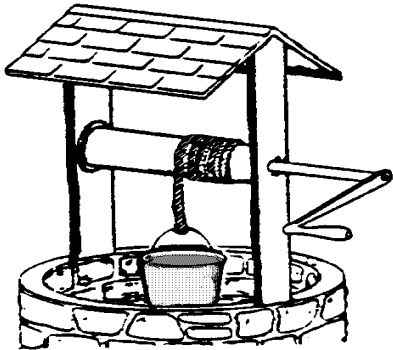


LEVER

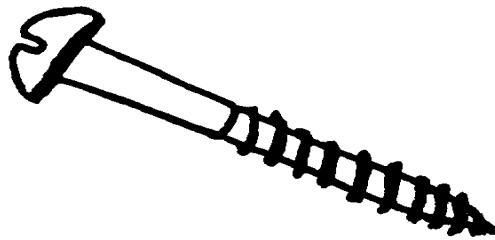


WHEEL & AXLE

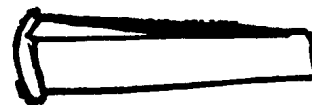
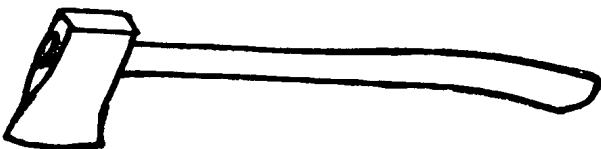
EXAMPLES OF MACHINES



PULLEY



SCREW



WEDGE

APPLIED SCIENCE - TECHNOLOGY (2A)

PROBLEM: Can you predict what a machine was designed to do?

PREDICTION: _____

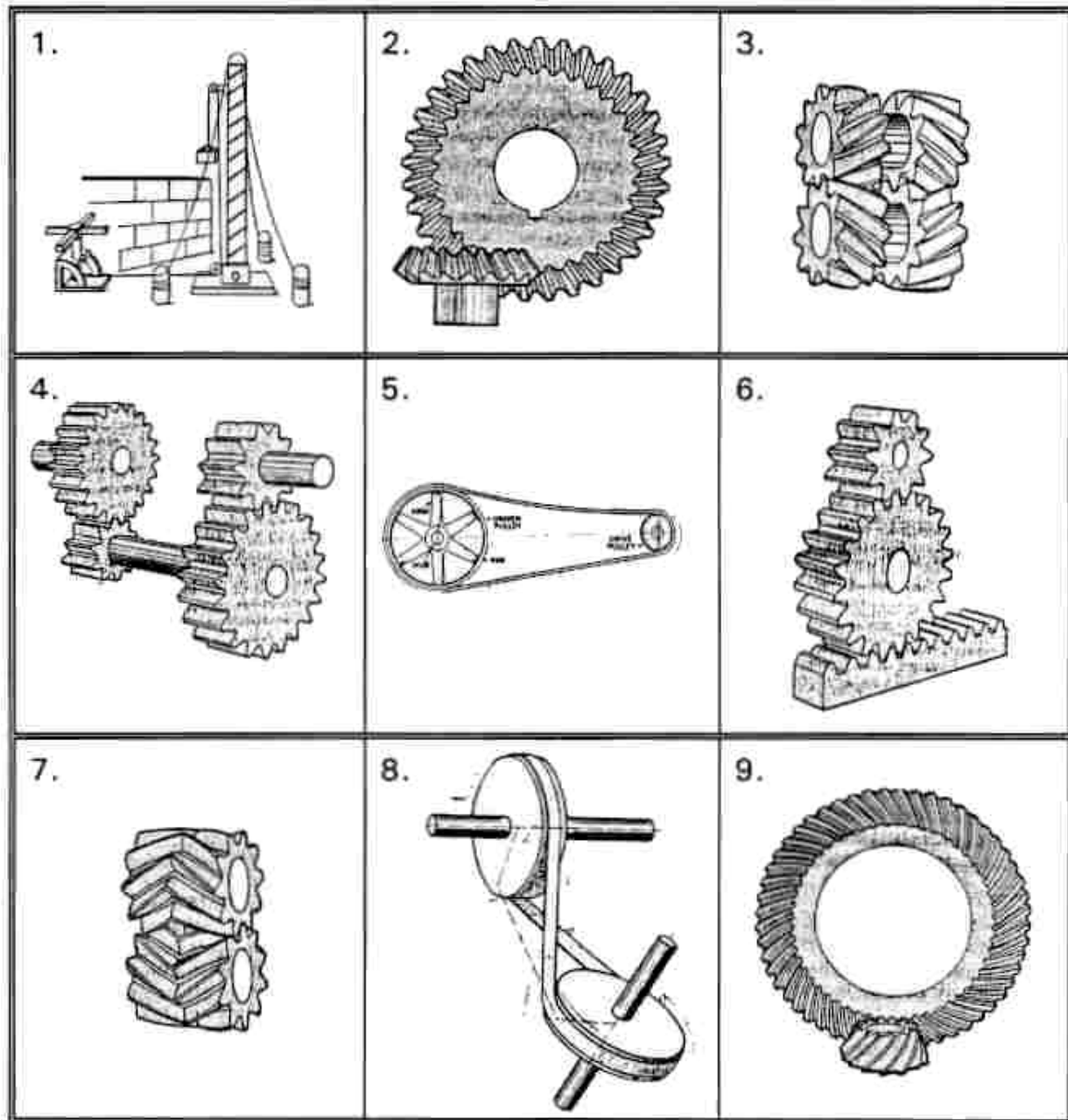
PROCEDURE: Use the following words to describe the simple machines: inclined plane, lever, pulley, wheel and axle, gears, wedge

ITEM	DESCRIBE MACHINE	HOW DOES IT MAKE LIFE EASIER
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

CONCLUSIONS: Can you determine the use of machines?

APPLIED SCIENCE - TECHNOLOGY (2A)
POST

State whether the pictures below are a pulley or a gear.



APPLIED SCIENCE - TECHNOLOGY (2B)
PRE LAB

5 TECHNOLOGIES THAT MAKE MY LIFE EASY.

1.	
2.	
3.	
4.	
5.	

DRAW A PICTURE OF ONE OF THE TECHNOLOGIES LISTED ABOVE.

APPLIED SCIENCE - TECHNOLOGY (2B)
LAB

LOOKING AT A COMPUTER CHIP

PROBLEM: What is on a computer chip?

PREDICTION: _____

PROCEDURE: Look at the piece of silicon.

ITEM	DESCRIBE
SILICON	

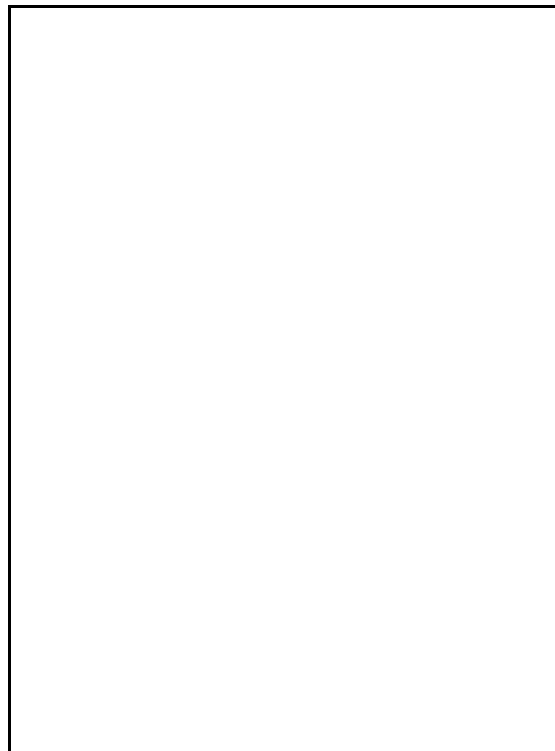
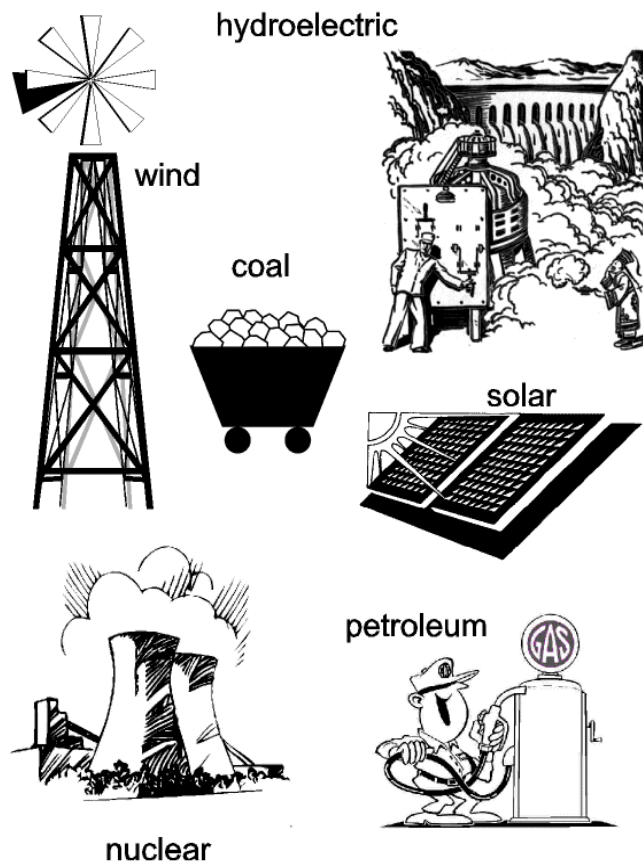
Look at the computer chip under the microscope. Keep the lid on the box, you can use the microscope to look through the box. Draw what you see.



CONCLUSION: How is silicon related to a computer chip?

APPLIED SCIENCE - BUILT ENVIRONMENT (2) PRE

Draw your favorite energy source.



APPLIED SCIENCE - BUILT ENVIRONMENT (2)

PROBLEM: Does more magnification increase solar energy?

PREDICTION: _____

PROCEDURE: Put a leaf on aluminum foil. Try and burn the leaf using 1, 2 and 3 lenses. (If you burn a leaf put it out immediately.) Your teacher will give you instructions how to perform this experiment outside. Describe how long it takes for the leaf to begin to burn. (Count: 1 thousand 1, 1 thousand 2).

	DESCRIBE WHAT HAPPENS TO YOUR LEAF
1 LENS	
2 LENS	
3 LENS	

Put your finger on the Fickle Foam and describe what happens.

CONCLUSION: Can you control the use of solar energy?
