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ABSTRACT

This document provides a series of worksheets for use in elementary school instruction concerning the metric system. The broad objective of the instruction is that the student be "comfortable and accurate in using metric measures in daily life." Specific objectives are identified in six categories: (1) think metric, (2) linear measures, (3) temperature, (4) metric in the kitchen and market, (5) let's educate the public, and (6) careers in metric. For each objective, instructional activities and suggestions for criterion referenced evaluation are discussed. (SD)

TRY IT YOU'LL LIKE IT: LET'S GO METRIC

BY

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Try It You'll Like It: Let's Go Metric is designed as a beginning course. Its purpose is for students to be able to use and understand metric terminology and relate it to the world or work and home. With increase in international trade and relations, educating student to the world of metric is vital if they are to be prepared for future living.

Let's Go Metric is to be thinking metric. The goal is not to teach conversion but to familiarize students with the metric units and to understand how to use it. Conversion should not be taught since it tends to be very confusing. Changing to metric can be easy and fun if approached tactfully and creatively.

This unit is geared for students who have had little or no metric background. It can be used by students from 7th to the 12th grade. This unit is geared toward the rural school student from lower, lower middle class families.

Try It You'll Like It: Let's Go Metric

Conceptual Outline:

I. Think Metric

II. Linear Measures

III. Mass and Liquid

IV. Temperature

V. Metric in the Kitchen and Market

VI. Let's Educate the Public

VII. Careers In Metric

OBJECTIVES

Broad Objective: To be comfortable and accurate in using metric measures in daily life.

THINK METRIC

Student will be able to:

C 2.0 Discuss the importance of metric.
C 1.0 Recognize metric terminology to 80% accuracy, given a list of metric terms.
A 1.0 Express feelings about change, willingly.
A 2.0 Share feelings about the change to metric.

LINEAR MEASURES

C 3.0 Understand the sub-divisions of a metre.
C 3.0 Label the divisions of a metre.
P 2.0
P 3.0 Measure his body parts using a metre stick or tape measure.
C 2.0 Estimate the number of centimetres of different objects.
C 3.0 Demonstrate ability in calculating distances in kilometres, given a map.
P 3.0
P 3.0 Measures various articles in grams and litres.
C 4.0 Distinguish when to use a gram and when to use a litre.
A 3.0 Discover how many grams and litres are in each metric prefix.
C 3.0
C 2.0 Compare and contrast the advantages and disadvantages of metric measures.

TEMPERATURE

P 3.0 Use the celcius thermometer to measure temperatures.
C 1.0 Select a temperature in celcius for baking and for water temperatures for laundry.

METRIC IN THE KITCHEN AND MARKET

P 4.0 Use metric measures in preparing a recipe to a satisfactory degree.
C 3.0 Demonstrate the ability to read and understand metric labels.
P 3.0 Design a metric label for a canned food product.
A 4.0
C 5.0
A 3.0 Summarize reasons for their willingness to use metric personally and to convince others to accept its use.

LET'S EDUCATE THE PUBLIC

A 4.0 Communicates to the public about metric.
A 3.0 Works with other students in developing a mass media presentation about
C 5.0 metric.

* CAREERS IN METRIC

C 6.0 After observing Careers that use metric measures the student will assess the necessity of using metric.
A 4.0 Communicate to the public about careers that use metric measures.
A 5.0 Displays his value of the metric system in daily living.

* Careers can be used as a stimulus for wanting to learn metric and as a follow-up of where one can use it and why it is important. This concept can be used at the beginning and end of the unit.

* This is a congruent objective using cognitive and affective domains. It is hoped that the student can not only learn the metric measures, but that the student values metric.

Concept: Think Metric

Generalization: There is a growing world-wide trend for adopting one uniform, internationally accepted set of measurement standards, since the metric system of weights and measures is used by about 90% of the worlds population it would be best suited.

The United States is the only large industralized country in the world not using this system, but by changing it can greatly benefit, both in international relations and personal trade.

Metric is a potential time saver, it is relatively easy to learn and use since it is based on units of ten.

The metric system uses four base units: grams (weight), litre (volumn), metre (length), celcius (temperature). To each base unit can be attached the prefix milli meaning .001, cent .01, deci .1, deka 10.00, hecta 100.00, and kilo 10,000.00.

Behavioral Objectives	Instructional Strategies	Evaluations
Discuss the importance of metric	Read the Rip Van Metric Story (#1)	
	Show a map of all the countries using metric. (Transparency #15).	
Express feelings about change, willingly	Discuss why the United States must change to metric. Guest speaker. (Suggestions of whom to contact. Pharmacist, mechanic, chemist, doctor, photographer).	Discussion
Recognize metric terminology to 80% accuracy, given a list of metric terms.	Write the base units on the board. Write the prefixes on the board. Show how they can be combined with the base.	Quiz item
	Explain the metric units by comparing them to the United States money system. (Transparency #16).	
	Play metric rhythm to familiarize students with terminology. (Games #17).	Class participation
	Complete Metric Mumble.	Metric Mumble #2

Behavioral Objectives	Instructional Strategies	Evaluations
Shares feelings about the change to metric	Have each student bring something or find a place in the community that uses metric. Make a bulletin board or mobile of these places or things. Share and discuss these ideas. Emphasize metric is coming in many places.	Ideas brought to class and discussion of these ideas.

Criterion Measure

Does the student know the metric prefixes?
Does the student know the metric bases?
Can the student tell why the change to metric is important?

Concept: Linear
Generalization: In the metric language, length is measured in metres, with the centimetre and kilometre the most frequently used units.

Behavioral Objectives	Instructional Strategies	Evaluations
Understand the sub-divisions of a metre.	Introduce the metre Give each student his own metre stick Using a large chart, show how the metre is sub-divided. Do work sheet on metre divisions.	 Worksheet #3
Label the division of a metre		Test Item
Measures his body parts using a metre stick or tape measure	Complete worksheet on measuring body parts. Have class measure doorways, windows, school pool, hallways, etc. Make signs of the length of the pool, halls, etc., to help educate the rest of the school on metric measures.	Worksheet #4 Class participation and enthusiasm

Behavioral Objectives	Instructional Strategies	Evaluations
Estimate the number of centimetres of different objects.	Display objects on a bulletin board, have the student guesstimate the measurement of each in centimetres. Discuss how much easier it is to be accurate in centimetres.	Evaluation of enthusiasm of working with the metre.
Demonstrates ability in calculating distances in kilometres, given a map.	Bring in road signs in metric and/or take the students outdoors and show signs in kilometres. Emphasize that some foreign cars speedometer have kilometre readings. Ask a student to draw one from an English sports car. Take a field trip.	
	Divide into small groups. Give each group a map in kilometres and have them work on problems in calculating kilometres. #5	Have each student take a map in kilometres home and do a problem similar to the one done in class.

Criterion Measure

Does the student know what a kilometer is?
Does the student know the sub-divisions of a meter?

4

Concept: Mass and Liquid

Generalization: A litre is the metric unit for liquid measurement.

In metric, dry weight is measured in grams, with 1 gram being about the weight of a thumb tack.

Since the gram is such a small unit of weight most dry weight measurements are calculated by using the kilogram.

Behavioral Objectives	Instructional Strategies	Evaluations
Distinguish when to use a gram and when to use a litre	Demonstrate the different pieces of equipment used to weigh in metric	

Behavioral Objectives	Instructional Strategies	Evaluations
Discover how many grams and litres are in each metric prefix	Introduce the litre and gram. Show how to measure dry and liquid ingredients. Have students weigh themselves in metric.	
Measure various articles in grams and litres	Label a sample of a gram and a kilogram with cards saying "I am a gram," "I am a kilogram," "Weigh me." Provide other items to weigh such as food, household items, or personal items. Encourage people to weigh articles they carry everyday. Provide water or other liquids to pour into litre containers, such as soda pop or juice.	
	Complete worksheet on grams and litres	Worksheet #6
	Play metric-Mix-up #17 Have a contest to guess the weight in metric of a jar of beans. Give a prize to the winner.	
	Have a metricartoon contest. Give prizes, display winners around the school, in the school paper or in a cook book. #19	Judge metricartoons
Compares and contrasts the advantages and disadvantages of metric measures	Write a paper comparing and contrasting the advantages and disadvantages of the metric system.	Evaluation of paper

Criterion Measure

Can the student use a gram and litre properly?
Can the student use measuring equipment to measure the gram and litre properly?

Concept: Temperature
Generalization: Temperature in metric is stated in degrees Celcius, with water freezing at 0°C and boiling at 100°C while 37°C is normal body temperature.

Behavioral Objectives	Instructional Strategies	Evaluations
Uses the Celcius thermometer to measure the temperature	Complete temperature worksheet	Worksheet #7
	Metric Mystery #8	
Select a temperature in Celcius for baking and water temperature for laundry	Have the class change dials on the range, washing machines, etc., to metric.	
	Do discovery experiments in which the student must bake and wash at different temperatures to find which is the best temperature for certain products.	Discovery experiments and worksheets #9 & #10
		Which Doesn't Belong Quiz (Transparency #18)
	Metric Puzzle #10	Puzzle #11
	Quiz #11	Quiz #12

Criterion Measures

Can the student use the celcius thermometer to measure temperature?
Does the student know at what temperature in celcius to use in cooking and washing?

Concept: Metric In The Kitchen and Market

Generalization: In buying food, going metric could be mostly a language change, although some container sizes will need changing.

If metric becomes a universal language, the use of a recipe from one country can be used by another without measurement conversion.

Behavioral Objectives	Instructional Strategies	Evaluation
Use metric measures in preparing a recipe to a satisfactory degree	Have the class divide into laboratory groups. Prepare different kinds of pancakes served in the different countries using the metric system. (Use metric measuring equipment). Compare taste, texture, color, condiments used with these pancakes. Review the map of the countries using metric.	Successful recipe preparation Pancake compariosn chart #13
Demonstrate the ability to read and understand metric labels	Study can labels. Have students tell others about what labels say and mean. Make a collection of different labels using metric. The teacher may wish to emphasize dual labeling. Make a collage of these labels.	Give each student a label. Have them read it, and explain what it means.
Design a metric label for a canned food product	Have each student design a label for a can or package using metric terminology.	Judge the design of a can or package using metric. Criteria for evaluation: creative design, proper use of metric terminology product and terminology coincide.
Summarize reasons for their willingness to use metric personally and to convince others to accept its use	Look at these recipes in their native language or recipe books. Discover similarities. Have students summarize why it would be easy to use recipes from other countries.	Have students summarize why they will use the metric system. Evaluation of summary and discussion.
Plan a dinner using metric recipes.	Plan a dinner or party. Find recipes in metric measures.	Have students individually plan a picnic. Plan the grocery list. Evaluate the students use of metric.
Prepares a grocery list using metric measures	Prepare a grocery list in metric of the things needed for the dinner or party. Take a trip to the market. Look at label and container sizes. Purchase food for dinner using metric grocery l...	

Behavioral Objectives	Instructional Strategies	Evaluations
Works with other students in developing either a newspaper column or a movie about metric	Make a movie about metric, including metric in the kitchen and the market. Devise a sound track. Have students create commercials to be used in the movie.	Students evaluation of movie and news column. Checklist #14
	Part II Careers in Metric	
Create a newspaper advertisement or commercial about or using metric	Write weekly consumer articles about metric for the paper. Make advertisements about metric or using metric language.	Evaluate metric commercials or advertisements.

Criterion Measure.

Can the student tell others about the metric system?

Concept: Careers In Metric
Generalization: There are numerous careers in which one must know and be able to use the metric system.

Behavioral Objectives	Instructional Strategies	Evaluations
After observing Careers that use metric measures the student will assess the necessity of using metric	Examine a variety of careers in the community using metric. Invite guest speakers or take field trips to these career areas. Have students interview people in these careers asking how metric will affect the job and why it is important to know. Examples of places to visit: Mechanic: examine tools used look at foreign cars Pharmacist: examine equipment used look at the way medication is dispensed	have each student pick a career they would like to pursue. Have the student orally or in writing assess why he must be familiar with metric in this career.

Behavioral Objectives	Instructional Strategies	Evaluations

Hospital personal, doctor, nurse:
examine equipment that used metric measures
let students take their temperature with automatic temperature taker in Celcius

Coal Miner:
examine tools and machinery

Grocery Store:
examine scales and units used to purchase goods

Truck Driver:
mileage charts
weight of freight

*(Ford, Chrysler, Mac Truck)

Interior Designer:
figuring out how much materials will be needed to paper a wall or tile a floor using metric measures

Farmer:
farming equipment
selling produce using metric measures

* (Caterpillar Co., John Deere, International Harvester)

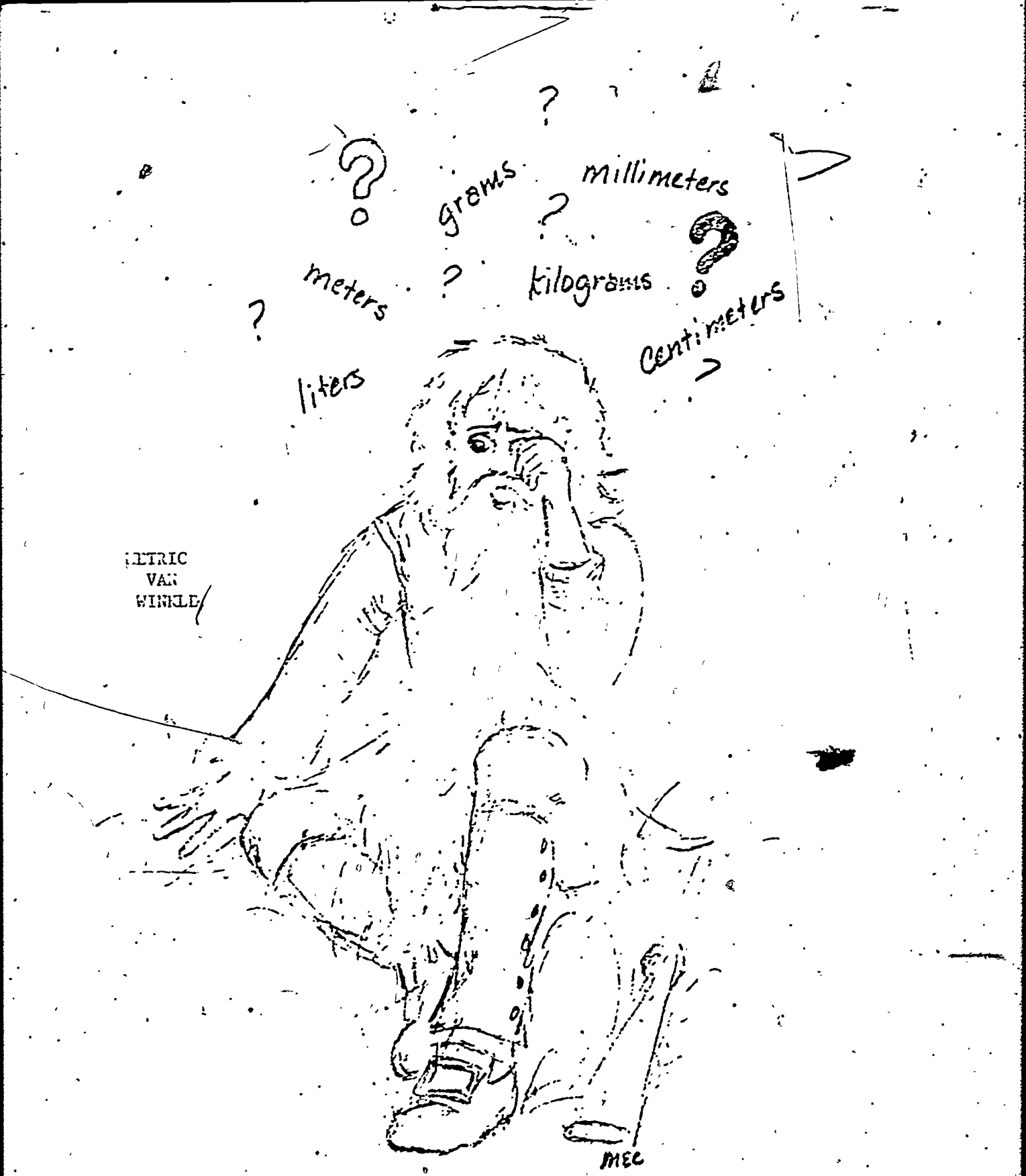
Businessman, Secretary, Computers:
office equipment

* (Minnesota Mining, Xerox Corp. Honeywell)

Behavioral Objectives	Instructional Strategies	Evaluations
	Contractors, Carpenters: equipment used *Companies that are using metric system of measurement in manufacturing products.	
Communicate to the public about careers that use metric measures	Provide a presentation on Careers using metric at the school fair. Make movie. Part II Careers Using the metric system.	Participation and interest.
Displays his value of the metric system in daily living		

Criterion measure:

Can the student assess why he must know metric when entering into the job market?



drawing by Myra Chroser, Student,
Rivesville High School

THE METRIC VAN WINKLE STORY

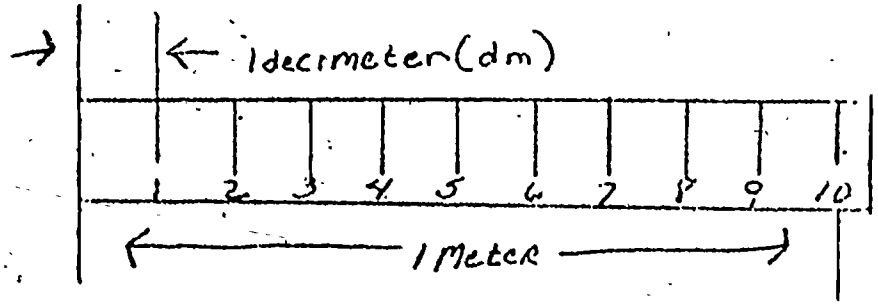
Let's pretend for a few minutes that we are Metric Van Winkle and we have been asleep for five years. Today you wake up. Yawn, stretch and decide you better hurry and get to work. You jump in your car and take off. You are still a little groggy so you turn on the radio to keep you awake. The weather forecast is on and the announcer says, "Today it will be sunny and warm with a high of 27°Celcius." You think, "What's the matter with that guy, it feels like it's 75°!" "Celcius, what's Celcius?" Well, you think, I'm still a little groggy and not hearing right, and you drive on. Going down the highway you notice some road signs. One sign says 10 kilometres to Doomsville. "Kilometres, what is wrong with those sign painters, don't they know it is miles?" After all those years asleep Metric Van Winkle is still a little groggy, you can't figure out what is going on. You stop to get gas. The sign at the pump says, "53¢ a litre." "A litre, what's going on?"

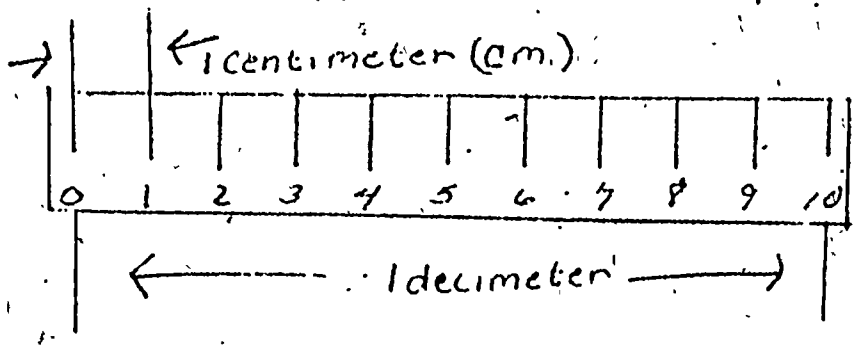
Well, what is Metric Van Winkle's problem?

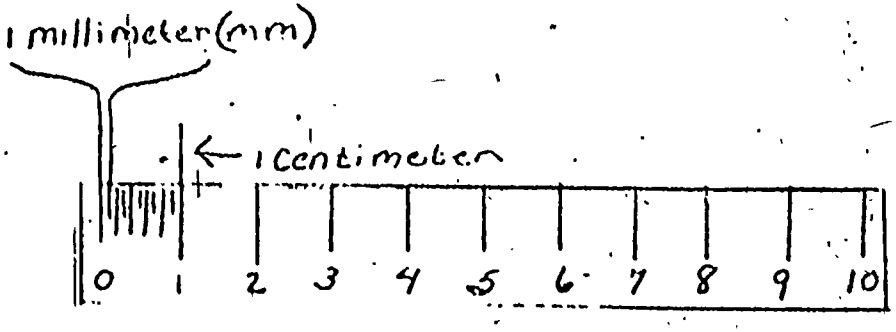
What is the units these things have been changed to?

How can you avoid becoming a Metric Van Winkle?

How A Meter is Sub-Divided







Buckeye, Donald A. I'm OK - You're OK Lets Go Metric. Troy, Michigan Midwest Publishing Co., Inc., 1973.

#3

Name _____

Date _____

THINK METRIC

METRIC MUMBLE

Directions: The Metric Mumble contains hidden metric terminology. These terms are angled right to left, up and down or at an angle. Find 10 metric terms. Circle each term you find.

B	H	F	H	Y	D	N	K
K	L	D	E	D	E	C	I
C	M	I	C	X	K	S	L
C	E	N	T	I	A	W	O
D	T	L	O	E	M	P	V
Z	E	L	S	G	R	M	M
G	K	J	M	I	L	L	I
P	S	X	N	G	U	T	V
W	B	L	F	O	R	S	T

J. C. Penny's. "Moving Toward Metric". Insights into Consumerism, J. C. Penny's, 1974.

#4

METRIC WORKSHEET

Let's Measure Ourselves

Name _____

Directions: You will need your meter stick. Measure the following body parts. List your measurements in the measures asked for. Answer all questions.

1. Measure your foot. mm _____ cm _____
2. Measure the distance from the nose to thumb of an out reached arm.

   mm _____ cm _____
3. How many centimeters are in a meter? _____
4. Measure the width of your hand in centimeters. _____
5. Measure the width of your thumb in centimeters. _____
6. What would be the width measurement of your thumb in millimeters? _____
7. Measure your:

   Waist cm _____ mm _____

   Hips cm _____ mm _____

   Bust cm _____ mm _____
8. How many millimeters make one centimeter? _____
9. How many mm make one cm? _____
10. How many mm make 10 centimeters? _____
11. How many decimeters make one centimeter? _____
12. How many mm make one decimeter? _____
13. Measure the spread of your hand. mm _____ dm _____
14. How many decimeters are in a meter? _____
15. How many centimeters are in a decimeter? _____
16. How many centimeters are in a meter? _____
17. How many millimeters are in a centimeter? _____
18. How many millimeters are in a meter? _____

19. If one dollar is like a meter, then what is a dime? _____

20. If one dollar is like a meter, then what is one penny? _____

21. If one dollar is like a meter, then what is 1/10 of a penny? _____

Buckeye, Donald A. I Am OK - You're OK Lets Go Metric. Troy Michigan, Midwest Publishing Co., Inc., 1973.

KILOMETRE PROBLEM

You and your friends have decided to go on a bike trip to (the name of a camping area, resort town, etc.). You leave on Sunday morning at 9:00. By 5:00 you want to be at (name of camping site). How many kilometres did you travel? _____ If it would take one hour to go 20 kilometres, how far would you have gone? _____ On Monday, you travel to ( ). How many kilometres was traveled Monday? _____ On Tuesday you travel to ( ). You forget your bike pack, you must go back and get it. That evening you end up at your destination ( ). How many kilometres did you go on Tuesday? _____ How many kilometres is it from the (beginning) to the (end)? _____ If there is 1000 metres in a kilometre, how many metres did you travel? _____

Other places to chart could be:

to the grocery store

on a ski trip

the miles the school bus travels in a week

a trip to a school football or basketball game

Debra Cooley, West Virginia University, Morgantown, West Virginia, 1976.

WORKSHEET
LITER & GRAM

The liter is used to measure liquids. Circle the following ingredients that you would measure with a liter.

flour	corn syrup	milk
salt	baking powder	water
butter	vanilla	corn starch

Use the equipment and sugar in the laboratory to find the answer to the following questions:

If 10 deciliters is one liter (l) and 10 centiliters (cl) is one deciliter, how many centiliters (cl) are in one liter (l)? _____

If 10 milliliters (ml) is one centiliter, then how many milliliters are in one deciliter? _____

How many milliliters are in one liter? _____

Complete the following table:

_____ milliliter (ml) = 1 centiliter (cl)

_____ cl = 1 deciliter (dl)

_____ dl = 1 liter (l)

_____ ml = 1 liter (l)

_____ cl = 1 liter (l).

A gram is used to measure dry ingredients. A gram is too small a unit for daily use since it is the weight of a thumb tack. Many ingredients that would be measured using a gram could be baking powder, baking soda, salt and spices. The kilogram is the unit used most to weigh people, food, freight and other things. For instance, a child might weigh 13.5 kilograms (kg) or you might buy .5 kg of meat. Using the scales and weights in the lab, find out how many grams make a kilogram. _____ Name some items that may weigh that much. _____

_____

Weigh them to see how much they do weigh.

Using the scales, answer the following questions:

1 gram = _____ milligrams

1 milligram = _____ grams

1 gram = _____ centigrams

1 gram = _____ micrograms

1 kilogram = _____ grams

1 centigram = _____ grams

1 milligram = _____ grams

1 microgram = _____ grams

Here is a recipe for Crisp Peanut Butter Cookies. Fill in the blanks with the metric words that would fit. (liter, gram) Remember liter is for liquid and gram is for dry ingredients.

Example:

Parsley Meat Loaf

454 grams ground beef
72 grams quick oats
67 grams diced onions
30 grams minced parsley
80 milliliters water
6 grams salt
dash pepper

Crisp Peanut Butter Cookies

224 _____ margarine

251 _____ peanut butter

200 _____ sugar

212 _____ light brown sugar

2 large eggs beaten

5 _____ vanilla

312 _____ all purpose flour

3 _____ baking powder

4 _____ salt

Gaucher, Clair and Perry, Sophie. What Impact Will Metrification Have on Home Economics? Forecast, 1974, XIX, (7), 14-16.

METRIC WORKSHEET

TEMPERATURE

Name_____

Date_____

1. What metric measure is used to measure temperature?

2. Where have you heard this word before?

3. Look up the word Celsius or Centigrade in a dictionary and find out why it is called a Celsius or Centigrade thermometer.

4. What are the advantages or disadvantages of this thermometer?

5. Measure the temperature in Celsius, of boiling water. What is it?

6. Measure the temperature in Celsius, of iced water. What is it?

7. Measure the temperature of lukewarm water. What is it?

8. Take your temperature. What is it?

Assignment:

Keep track of the temperature outdoors every day for a week, in Celsius.

Find five places or things that use Celsius.

What careers would one have to know Celsius in? Do you want to be involved in one of these careers?

Buckeye, Donald A. I'm OK - You're OK Let's Go Metric. Troy, Michigan, Midwest Publishing Co., Inc., 1973.

Debra Cooley, West Virginia University, Morgantown, West Virginia, 1976.

METRIC

METRIC MYSTERY

Name _____

Date _____

It was past midnight, the sky was gloomy and a light snow had begun to fall. The thermometer outside read _____°Celsius. Sherwood Stone, the famous detective, sat next to the fire place. The room was a cozy _____°Celsius. He was thinking over the events of the evening.

Mrs. Gram O'Litre (known to her friends as Milli) had returned home to discover her anitque statue, Kilo de Milo, had disappeared. She immediately phoned Sherwood Stone and his able assistant, Wadsworth, to report the thievery. Milli described the statue as a "multi-measurement metric marvel" recording weight in _____, volume in _____ and length in _____. When touched by human hands it registered body temperature of _____°Celsius. "Quite a marvelous instrument," thought Stone, "and only weighing _____g, it's a rare piece of work."

Upon further investigation, Stone and Wadsworth discovered a set of footsteps outside the kitchen window. "Obviously a one-man operation," mused Wadsworth. "Judging from the length of his step, a meter, he is an average size man about _____cm tall, and I would say, from the depth of the footprint, his weight is _____kg," Wadsworth said. "I would estimate his weight at 1 kilogram less." "How do you figure that, Stone?" asked his assistant. "Elementary, my dear Wadsworth, he was carrying the Kilo de Milo."

A ringing phone brought Stone to his feet. It was Mrs. Gram O'Litre telling him of a phone call about the statue.

Who stole the statue? What was the motive? How did Stone solve the case? Complete the story using as many metric terms as you know. (Use at least 10 terms)

Probable answers are as follows: 0°C; 20-25°C; grams; litres; metres; 37°C; 1000 g; 177-180 cm; 77-80 kg.

J.C. Penney's. "Moving Toward Metric." Insights Into Consumerism. New York, J.C. Penney's, 1974.

BAKING TEMPERATURE

Directions: Prepare three (3) recipes of the following three (3) foods. Bake one recipe at 218, one at 177 and one at 149. Fill in the chart after each baking. Circle the temperature that was most satisfactory for each food.

FOOD	TEMPERATURE	RESULTS AND COMMENTS
PIZZA	218°C	
	177°C	
	149°C	
CUPCAKES	218°C	
	177°C	
	149°C	
MEAT	218°C	
	177°C	
	149°C	

Answer the following questions:

Hot oven is _____.

Moderate oven is _____.

A slow oven is _____.

D. Cooley, West Virginia University, Morgantown, West Virginia, 1976.

WATER TEMPERATURE

The temperature of wash water is important because it directly affects: cleaning wrinkling, unstable dyes, durability of fabric finish.

Directions: Wash each of the following articles at these three temperatures: 60, 37, 26. Fill in the chart below after each washing. Circle the temperature that was most satisfactory for each article taking into consideration the affects listed above.

ARTICLE	TEMPERATURE	RESULTS AND COMMENTS
Sturdy Whites (sheets)	60°C	
	37°C	
	26°C	
Colored Permanent Press (shirt)	60°C	
	37°C	
	26°C	
Silk (blouse)	60°C	
	37°C	
	26°C	

Answer the following:

Hot water is _____.
Warm water is _____.
Cold water is _____.

D. Cooley, West Virginia University, Morgantown, WV, 1976.

METRIC CROSSWORD PUZZLE

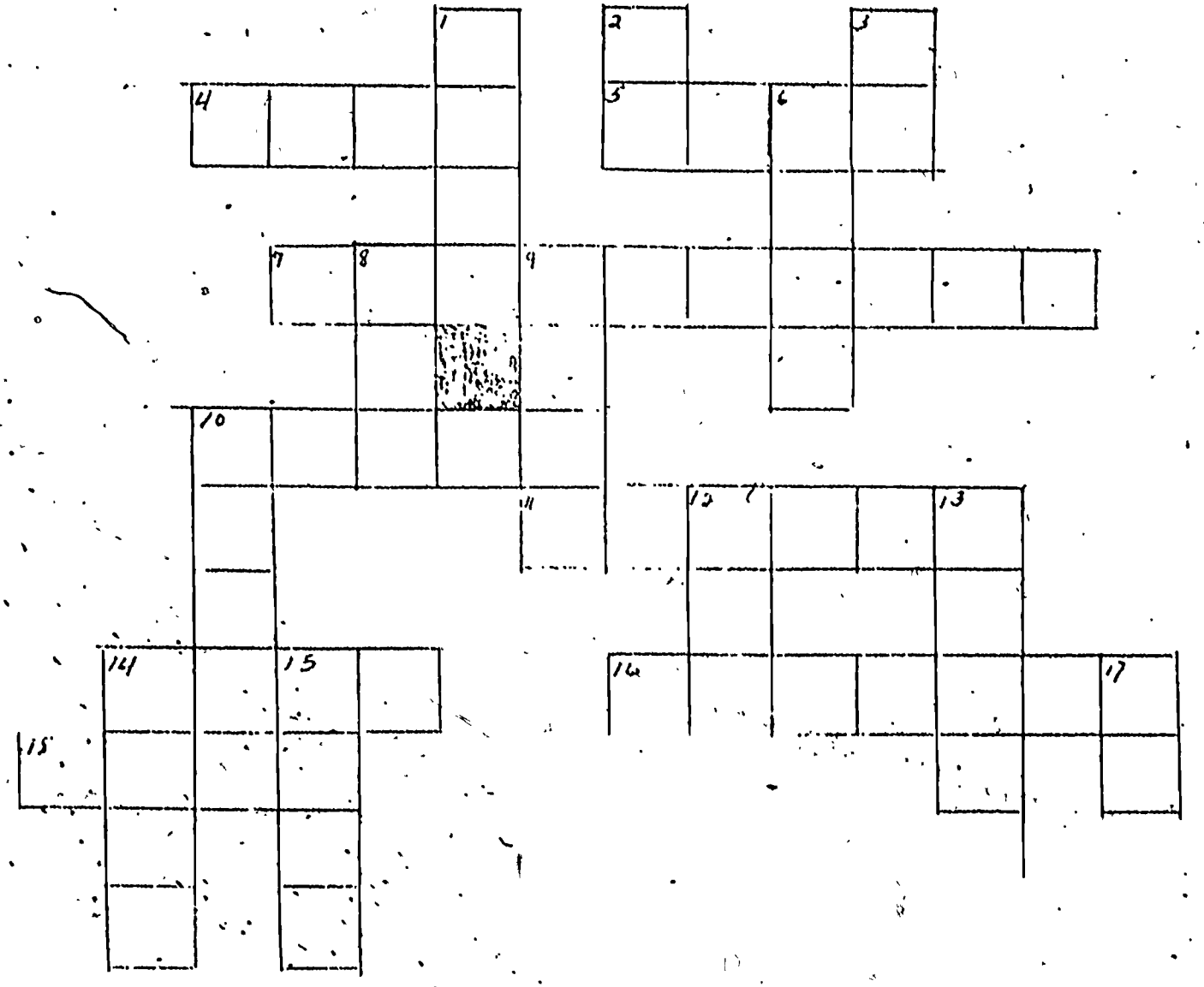
ACROSS

4. This metric prefix represents X 1000. (Kilo)
5. Use this metric unit to measure mass or weight. (Gram)
7. Speed limits may soon appear in both miles and this unit. (Kilometres)
10. A girl's name, also, the prefix 1/1000 in the metric system. (Milli)
11. An industry that wasn't short sighted when it came to metrics. (Optics)
14. The prefix representing 1/10 of a metre, litre or gram. (Deci)
16. A mercurial messenger -- the metric scale for temperature. (Celsius)
18. Necessary temperature for a snow fall. (Zero)

DOWN

1. At 100°C water is likely to _____. (Boil)
2. The symbol for the metric measurement you might find on a package of meat. (kg)
3. Write the symbol for 1/1000 of a metre and you'll have this answer. (mm)
6. An industry racing to the metric challenge. (Auto)
8. This word would describe your condition if your body registered 40°C. (ill)
9. The state that initiated the dual measurement look on its highways. (Ohio)
10. A little longer than a yard is a good description for this metric unit. (Metre)
12. Legend has it that the length from heel to _____ of some King may have established our customary foot. (Toe)
14. This metric prefix represents X 10. (Deka)
15. Describe the weather at 5°C. (Cold)
17. Abbreviation for the international metric system. (SI)

J.C. Penney's, "Moving Toward Metric." Insights Into Consumerism. New York, J.C. Penney's, 1974.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METRIC QUIZ

Class_____
Date_____ Name_____

Completion: Complete each of the following sentences with the appropriate word. Place your answer in the blank to the right of the number. Each question is worth 1 point.

1. _____ When using the metric system dry ingredients are measured in _____.
2. _____ The _____ is used to measure length in the metric system.
3. _____ The _____ is used to measure weight.
4. _____ When using the metric system liquids are measured in _____.
5. _____ Temperature in metric is stated in degrees _____.
6. _____ In metric measures water freezes at _____0.
7. _____ In metric measures water boils at _____0.
8. _____ The unit used most to weigh people is _____.
9. _____ There are _____ centimetres in a metre.

Matching: The following prefixes in Column I are used with the base unit. Match the prefix in Column I to its meaning in Column II. Place your answer in the blank to the right of the number. Each answer is worth 1 point.

	Column I Prefix		Column II Meaning
10.	_____	milli	10.00
11.	_____	deci	100.00
12.	_____	centi	1,000.00
13.	_____	base	1.00
14.	_____	hecta	.10
15.	_____	kilo	.001
16.	_____	deka	.01
			.0001

Stations: Questions 17 through 36 are questions to be answered at the various stations throughout the room. Station 1 starts at the front of the room. After everyone has finished with the first 16 questions each person will take a station. You will stay at that station till I say move. You then move to the next station with the higher number. This will continue till all stations have been completed by all persons.

STATION 1

This is a metre stick. Label the various parts of the metre.

17. _____
18. _____
19. _____

STATION 2

Measure this book. How long is this book in centimetres?

20. _____

STATION 3

Weigh this apple. How many grams does it weigh?

21. _____

STATION 4

What is the temperature of this glass of water?

22. _____

STATION 5

How many litres are in this glass of water?

23. _____

How many millimeters?

24. _____

STATION 6

Of the ingredients on this tray which ones would you measure in grams?

25. _____
26. _____
27. _____

Which ones in litres or millilitres?

28. _____
29. _____
30. _____
31. _____

STATION 7

Look at the map. From point X to point Y is how many kilometres?

32. _____

STATION 8

These cloths are colored permanent press. At what temperature on the washing machine would you wash them?

33. _____

STATION 9

Look at the temperature setting on the range. It is set at 176°. Name two items you can bake at this temperature.

34. _____
35. _____

At what temperature would you bake a pizza?

36. _____

Debra Cooley, West Virginia University, Morgantown, West Virginia, 1976.

PANCAKE COMPARISON CHART

* Debra Cooley, West Virginia University, Morgantown, West Virginia, 1976.

Directions: In lab we made pancakes from different countries that use the metric system. List these countries and the type or name of pancake. Fill in the rest of the chart with as few ~~words or~~ phrases as possible.

Country Name of Pancake	Is it eaten at lunch, breakfast, dinner dessert or snack?	Taste	Color	Texture	Condiments used

CHECKLIST
EVALUATION OF METRIC MEDIA
Name _____

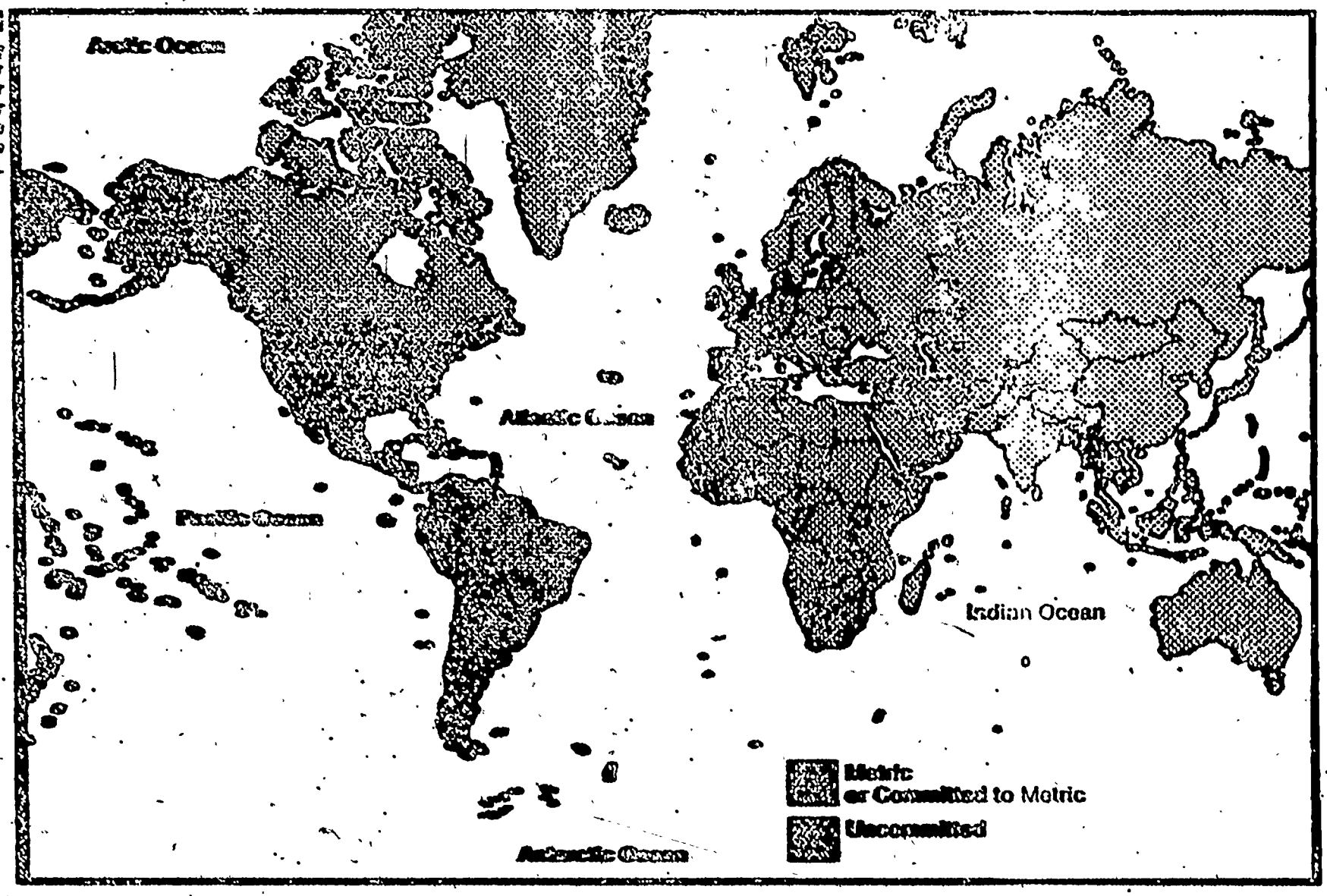
Directions: After reading the newspaper column and watching the movie do this checklist. Answer each of the following questions with yes or no by putting a check in the appropriate column. You are to evaluate both types of media.

	Movie		News Column	
	YES	NO	YES	NO
1. Does it explain what the metric bases are?				
2. Does it tell what the prefixes are?				
3. Does it explain the prefixes?				
4. Is it related to consumerism?				
5. Is correct english and speech used?				
6. Is it interesting?				
7. Does it explain the difference between a gram and litre?				
8. Does it explain how to look for metric language at the market?				
9. Does it explain why all things at the market don't use metric measures now?				
10. Does it explain why we must convert to metric?				
11. Does it show that there are many changes in equipment in the kitchen?				
12. Does it explain how metric can become a universal language?				
13. Does it explain the use of the centimetre-decimetre-metre?				
14. Does it examine the highway sign change to metric?				
15. Would it be informative to consumers?				
16. Would a person knowing nothing about metric understand it?				

17. Why would they understand it? _____
Why not? _____

18. What suggestions for improvement can you make? _____

Debra Cooley, West Virginia University, Morgantown, West Virginia, 1976.


Arctic Ocean
Indian Ocean
Metric
or Committed to Metric
Uncommitted

Unit	Meaning	Change in Decimal Place		
mill	$0,000.001	(X 10)	=	.01
penny	.01	(X 10)	=	.10
dime	.10	(X 10)	=	1.00
base	1.00	(X 10)	=	10.00
ten	10.00	(X 10)	=	100.00
hundred	100.00	(X 10)	=	1,000.00
thousand	1,000.00			

We have seen that moving the decimal one place to the right in a dollar figure increases the dollar amount 10 times. The same thing occurs when we move the decimal one place in the metre, gram or litre figure. The prefixes given below describe the amount of change for each unit.

Prefix	Meaning	Change in Decimal Place		
milli (m)	.001	(X 10)	=	.01
centi (c)	.01	(X 10)	=	.10
deci (d)	.10	(X 10)	=	1.00
base (m, g, l)	1.00	(X 10)	=	10.00
deka (dk)	10.00	(X 10)	=	100.00
hecta (h)	100.00	(X 10)	=	1,000.00
kilo (k)	1,000.00			

GAMES

Metric Rhythm

This game is used to familiarize the student with metric terminology. To play, divide the class into groups of at least 5 or more. Each student picks a metric prefix and base. One student starts by slapping his legs twice, claps his hands twice and snaps his fingers twice. On the first snap (the left hand) the student says his metric word. On the snap of the right finger he says someone else's metric word. The person's whose metric word was said then takes it and the procedure starts all over again. All persons slap, clap and snap in rhythm. The game goes faster and faster to try to get one confused. If a person misses he goes to the end and everyone moves to the next place. Try and see whom can stay in the first chair the longest.

Metric Mixup

This game is similar to old maids. When a student matches a pair he lays them down. A pair does not have to be the same card, but the same meaning. For example, a pair equals 1 m = 1 metre, 1 m = 10 decimetres or 10 m, 1 metre = 10 decimetres, 10 dm = 1 decimetre.

The person with the last card, the metric Crazy Pickle, is the Crazy Pickle and starts the game again. (See examples of cards that can be made for the game on the next two pages.) Developed by Debra Cooley, 1976.

	1 Litre	1 Kilo-litre	1 L
1000 grams	1 centilitre	1 gram	1 metre
1000 milligrams	1 g	1 Kilogram	1000 L
1 dm^3	10 cm	1000 mg	1 metre

1 m	1 cm	1000 g	1000 metres
1 Kilometre	1000 m	1000 cm	1 Km
10 decimetres	1000 Litres	1000 millilitres	1000 ml
1 decimetre	1 Kl	1 l	10 dm

WASHING TEMPERATURE QUIZ

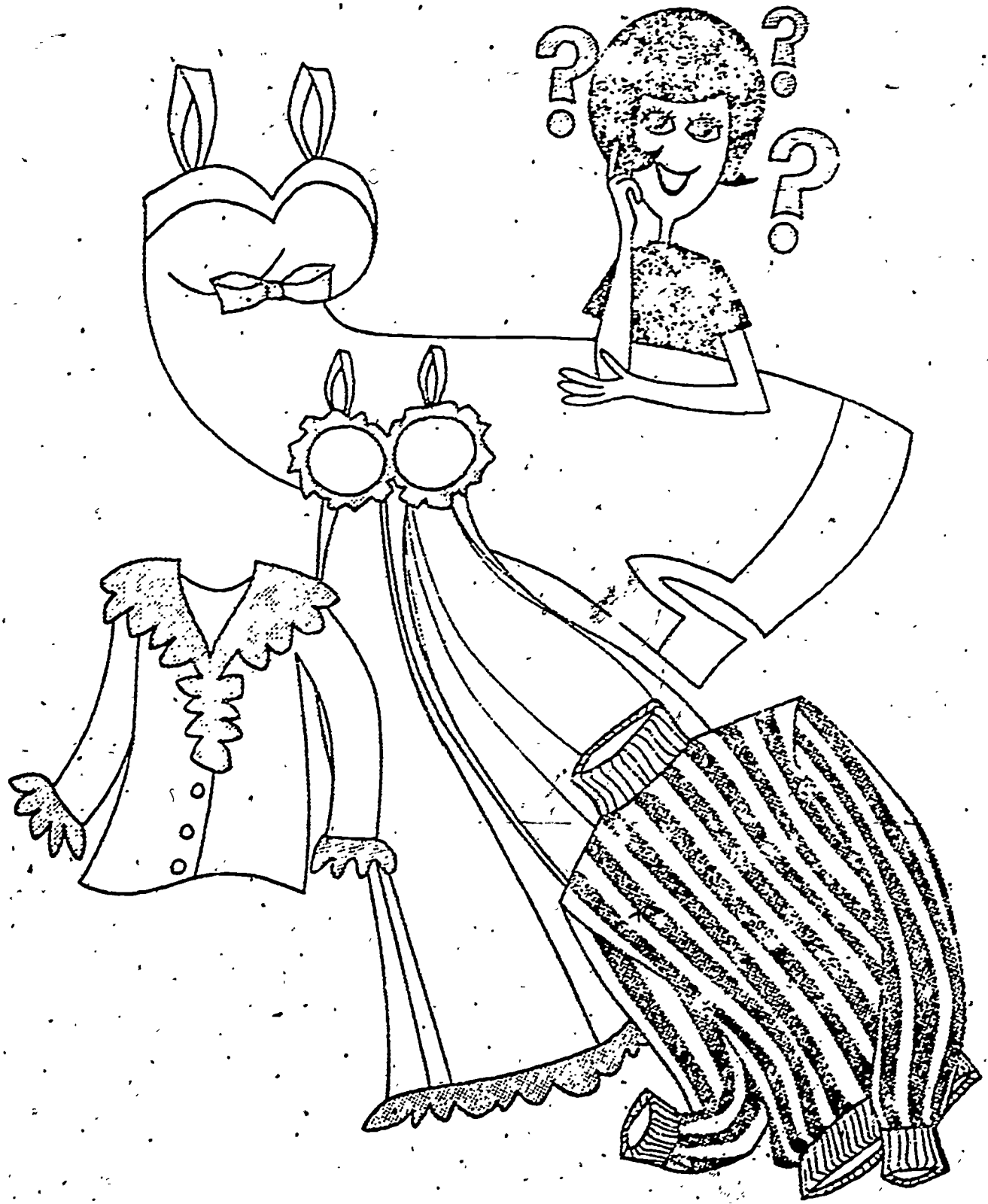
Use the transparency "Which Item Doesn't Belong in This Load"

Show the transparency. Give a washing temperature in Celsius. The student is to pick which item in the picture would not be washed at that temperature. Three or more transparencies can be used to completely evaluate the students knowledge.

Transparency

Proctor & Gamble. Lot's About Laundry Teaching Aids.

Which Item Doesn't Belong In This Load?



METRICARTOON

IF CRAZY PICKLE FLEW 5 DEKAMETRES A MINUTE, HOW FAR DID HE GO IN ONE HOUR?

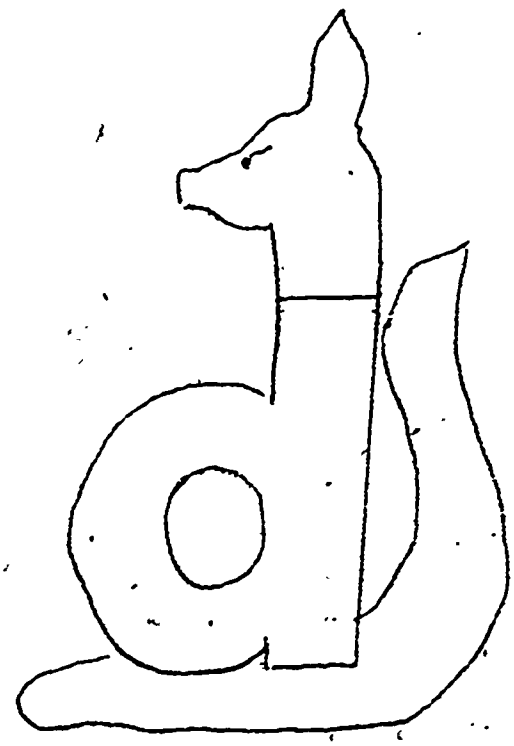
The purpose of the metricartoon is to have the student be creative and use his knowledge about metric to create a cartoon. The cartoons can be judged and prizes given such as a metre stick, metric measuring cups, etc. These cartoons can be displayed around the school to help others think metric.

Criteria for evaluation:

1. Creativity.
2. Proper use of metric.

MetRICArtoon #19

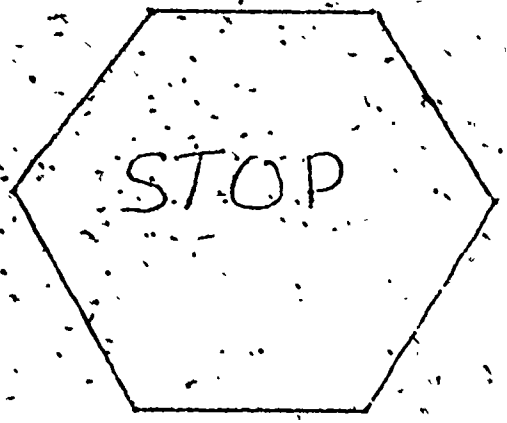
I Divide Meters by 10



Whats my Name?

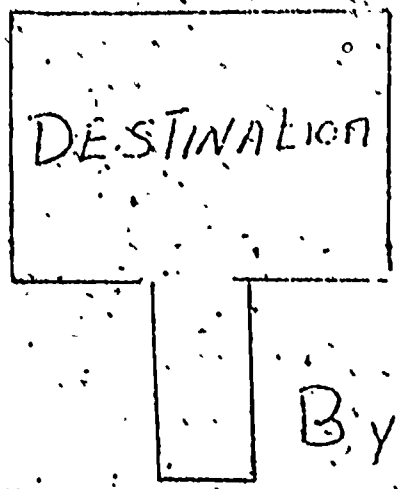
THE METRIC SYSTEM

It's A Sign Of The Times

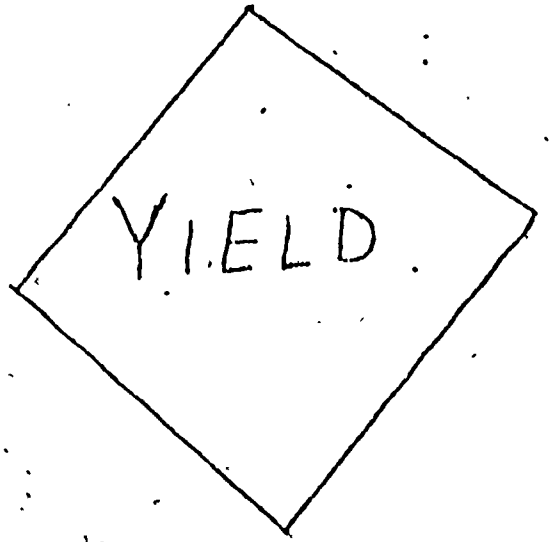


Be Informed

The more you Know About metric the better you'll Like it.

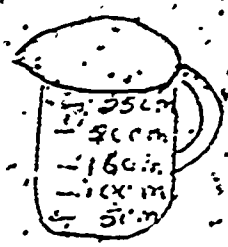


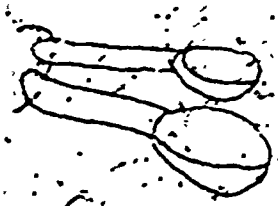
By 1980 Be Prepared!



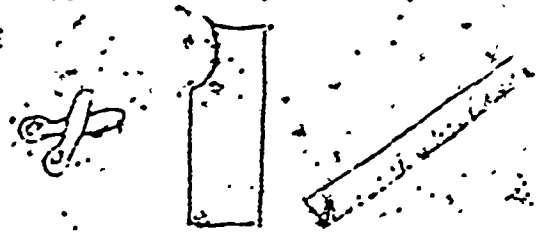
Discover Metric And put it into daily use.

METRICS COMING

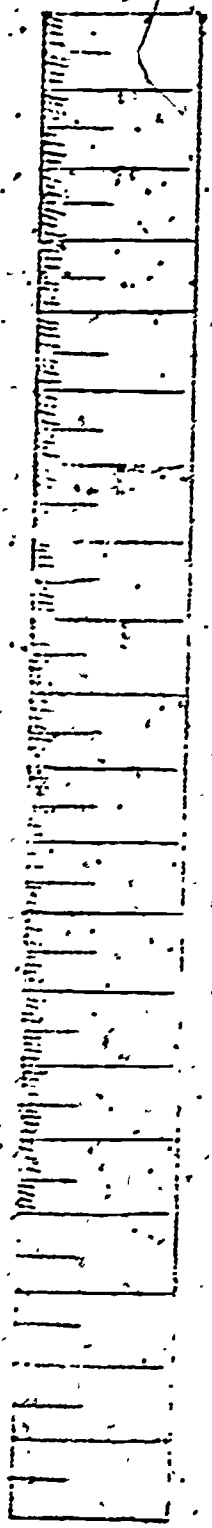




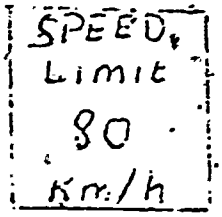
Cooking



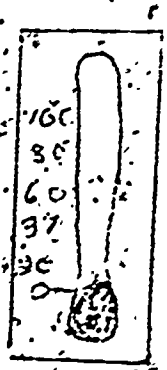
Sewing



Driving



Temperature



Shopping

WILL YOU BE ABLE TO MEASURE UP?

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