

Weller Health Education Center

Mysterious Microbes
Hygiene
Grades 2-3

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Program Objectives

Program Description:

Larger than life microbes show how germs are spread. Explore the immune system, disease prevention and preventive measures such as hand washing and sneeze control.

Standards:

PA 1.1.3.F; 1.1.3.G; 1.6.3.A; 10.1.3.E; 10.2.3.A

NJ 2.1.2.D4; 2.1.4.A2; 3.3.2.A.4; 4.2.3.A1

Objectives:

Upon completion of the program, students will:

1. Identify three places that microbes can be found.
2. List two ways in which microbes can be spread.
3. Identify two ways that microbes and viruses enter the body.
4. List two ways in which one can stop the spread of microbes.

Terms:

antibody – something that fights sickness and is made in our body’s immune system

bacteria – a type of microbe that can be helpful or harmful

contagious – able to be transmitted or passed on to another person or object through direct or indirect contact.

immune system – a system in our body that fights illness

microbe – a tiny organism that is found everywhere and that can be helpful or harmful

virus - very tiny non-living matter that can cause illness



Mysterious Microbes Word Search

Directions: Search For Words (Across and Up and Down)

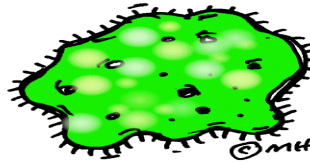
antibody, handshake, sneeze, sick, cough, cavity, sore throat, good,
immune system, harmful, everywhere, organism, microscope, germ, virus, microbe

q v w e g r g t i y u l p
m i c r o b e f m h v d s
i r a j o h r g m a e s a
c u v m d l m k u n r o n
r s i c o u g h n d y r t
o n t s n e e z e s w e i
s z y i x c v b s h h t b
c t y c u i o p y a e h o
o k l k q w e r s k r r d
p a s d f g h j t e e o y
e h a r m f u l e b n a v
m o r g a n i s m z x t c

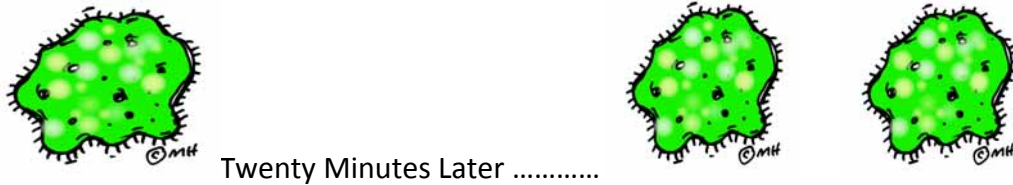


Mysterious Microbes Math Activity

When Microbes Divide, They Multiply!



Microbes can divide and become two microbes every twenty minutes.



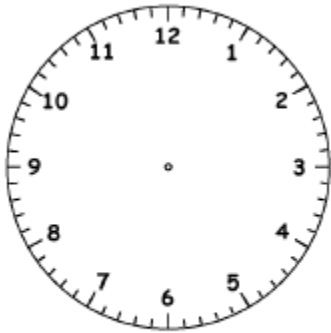
Directions:

1. Start the clock and do the math to see how quickly one microbe can make many, many more microbes.
2. Draw the hands on the clock and write the time that goes with it.
3. On the first clock, draw two lines for hands pointing to the 12.
4. Underneath, write the time, 12:00. "One Microbe" is written under the clock to show that we are starting with one microbe at 12:00.
5. On the second clock, draw the hands on the clock to show 12:20.
6. Underneath, write the time 12:20.
7. Underneath the time line, a multiplication problem is written to show how the microbes multiplied between 12:00 and 12:20.
8. Continue with each clock by making the time twenty minutes later than the clock before it and writing the time underneath. Then, write the multiplication problem to show how many microbes there are, remembering that microbes double every twenty minutes. Parts of the third and fourth clocks are done for you.
9. Advanced Problem: At approximately what time will there be 1000 microbes?



When Microbes Divide, They Multiply

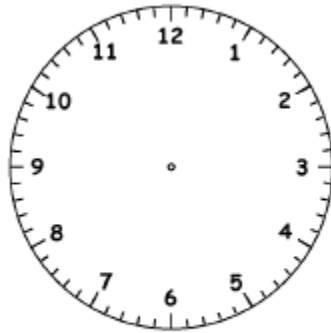
Name _____ Date: _____



_____ :

$$1 \times 1 = 1$$

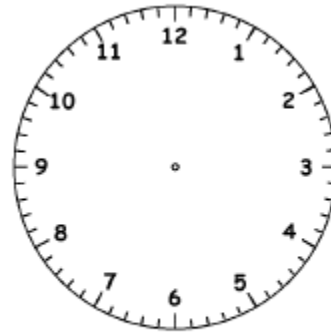
One Microbe



_____ :

$$1 \times 2 = 2$$

Two Microbes



_____ :

$$2 \times 2 = \underline{\hspace{2cm}}$$

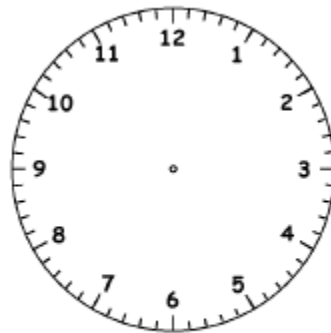
_____ Microbes



_____ :

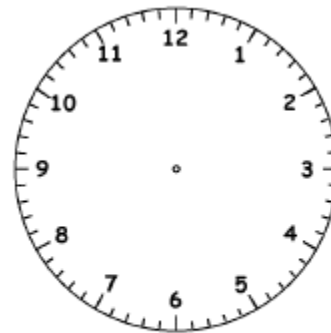
$$4 \times 2 = \underline{\hspace{2cm}}$$

_____ Microbes



_____ :

_____ Microbes



_____ :

_____ Microbes



Microbe Scavenger Hunt

Directions: Divide the class into groups of four. Each group should identify the answer to the clue and write down exactly where the microbe-containing item is in the classroom.

Group Members' Names _____

1. Microbes are passed along when we share this straight line drawing device during math class.

Item _____

Location _____

2. We have two of these to share microbes when we high-five each other.

Item _____

Location _____

3. When we plan a quick escape for recess, we need to touch this to leave the room.

Item _____

Location _____

4. When someone borrows this to erase a mistake, you'll have to stop writing your math answers for a moment.

Item _____

Location _____

5. This comfortable sitting area is sure to have many, many microbes on it.

Item _____

Location _____



6. If you have many papers to connect, you may want to put your papers in a pile, place them in this device and push down to hold them together.

Item _____

Location _____

7. Time to eat but don't share too much of this especially once you've started eating it.

Item _____

Location _____

8. Read, read, read, History, English and Math. Many, many microbes in this wealth of knowledge.

Item _____

Location _____

9. We don't have to separate things often but if we have to separate a piece of paper in half, we may want to use this tool.

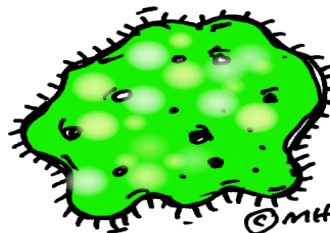
Item _____

Location _____

10. If you catch a sneeze in this then throw it away, you can say bye-bye to the microbes within it.

Item _____

Location _____





Mysterious Microbes Word Search Answer Key

Words To Find (Across and Up and Down)

antibody, handshake, sneeze, sick, cough, cavity, sore throat, good,
immune system, harmful, everywhere, organism, microscope, germ, virus, microbe

q	v	w	e	g	r	g	t	i	y	e	l	p
m	i	c	r	o	b	e	f	m	h	v	d	s
i	r	a	j	o	h	r	g	m	a	e	s	a
c	u	v	m	d	l	m	k	u	n	r	o	n
r	s	i	c	o	u	g	h	n	d	y	r	t
o	n	t	s	n	e	e	z	e	s	w	e	i
s	z	y	i	x	c	v	b	s	h	h	t	b
c	t	y	c	u	i	o	p	y	a	e	h	o
o	k	l	k	q	w	e	r	s	k	r	r	d
p	a	s	d	f	g	h	j	t	e	e	o	y
e	h	a	r	m	f	u	l	e	b	n	a	v
m	o	r	g	a	n	i	s	m	z	x	t	c



When Microbes Divide, They Multiply!! Answers Key

Microbes can divide and become two microbes every twenty minutes.

The first clock should indicate 12:00. Each clock should show twenty minutes later.

Clock One:	12:00	Math Problem:	$1 \times 1 = 1$	1 Microbe
Clock Two:	12:20	Math Problem:	$1 \times 2 = 2$	2 Microbes
Clock Three:	12:40	Math Problem:	$2 \times 2 = 4$	4 Microbes
Clock Four:	1:00	Math Problem:	$4 \times 2 = 8$	8 Microbes
Clock Five:	1:20	Math Problem:	$8 \times 2 = 16$	16 Microbes
Clock Six:	1:40	Math Problem:	$16 \times 2 = 32$	32 Microbes

At 3:20 there will be 1,024 microbes so at approximately 3:15 there will be approximately 1000 microbes.

Microbe Scavenger Hunt Answer Key

Location of items is classroom dependent.

1. ruler
2. hands
3. door knob
4. eraser
5. desk
6. stapler
7. lunch
8. book
9. scissors
10. tissue

Note to teacher- the following letter is intended for your students to take home as a follow-up for the days program. Please copy and distribute as you see fit in order to enable caregivers of students to reinforce the lesson of this program effectively.



Weller Health Education Center

Dear Caregiver,

Your child has participated in a program called “Mysterious Microbes” presented by the Weller Health Education Center. This program explains how a microbe or germ can infect the body. With the support of kid-friendly video’s and activities, the students learned how germs enter the body and what happens while inside. They also learned how germs are spread and the preventive measures that are used to protect us from getting diseases. The Weller Health Education Center emphasizes the preventive measures a person can take each day to avoid the effects of germs on the body.

Did you know that we have between two and ten million bacteria between our fingertips and elbow? Did you know that the number of germs on your fingertips doubles after you use the toilet? The germs can live for hours, even weeks, to be picked up by the next person who touches the same object. Do you wash your hands every time you use the restroom? Do your children? Teach children how they can protect themselves each day just by engaging in a simple activity of washing their hands regularly. Just because we can’t see the germs, it doesn’t mean that they are not there.

Below you will find some sample activities to guide you in taking steps to improve your family’s healthy habits. These activities can help to continue the message started today in our program. For additional resources you are welcome to utilize the parent, teacher and student resource links found on our website at www.wellercenter.org.

Sample Activities:

1. Encourage hand-washing
 - a. After using the bathrooms, playing outside, before eating, after running errands etc.
 - b. Encourage students to sneeze or cough into an elbow instead of the hand. People don’t go around shaking each other’s elbows do they?
2. Clean frequently handled objects around the house with soap and water or an anti-bacterial product.
 - i. Toys, doorknobs, light switches, sink fixtures, and flushing handles on the toilets.
3. Keep up to date on immunizations.
 - a. Yearly immunizations, such as the flu vaccine, may be a particularly good idea if you or your child has a weakened immune system or other chronic medical problems.
4. Be a good role model and engage in the activities that we tell our kids to do.
5. For a stronger immune system, get plenty of sleep, be physically active, manage your stress, drink plenty of fluids and eat a well balanced diet every day.

Yours in good health,

Weller Health Education Center