



Math Monsters™

presents

ESTIMATION

NCTM CONTENT STANDARDS

Numbers and Operations

- count with understanding and recognize “how many” in sets of objects
- compute fluently and make reasonable estimates
- use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencils, and calculators

NCTM PROCESS STANDARDS

Problem Solving*

Reasoning and Proof*

Communication

Connections*

Representation

**Indicates a strong emphasis in this episode*

OVERVIEW

This episode encourages children to develop flexibility when thinking about numbers. The monsters will demonstrate the importance of using estimation and approximations when dealing with larger numbers of objects.

As a result of viewing this episode, the children will:

- explore the purposes for making estimates
- consider the reasonableness of estimations
- use and view estimation as another method for computing large numbers

VOCABULARY

estimation
clump

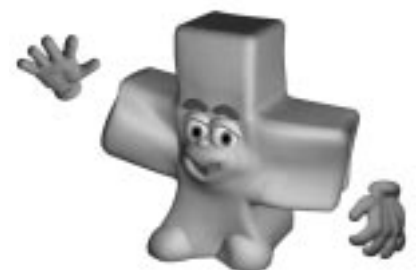
PROGRAM SYNOPSIS

Aunt Two Lips has contacted the monsters—she needs their help. Her gollywomple trees are ready to be picked and boxed. She would like them to pick and pack the fresh gollywomples. The monsters are happy to help. In order to do this, they will need boxes; but how many?

The monsters’ first challenge will be to find out how many gollywomples there are in the whole orchard so that they will know how many boxes they need. They decide to count the gollywomples. Because it is taking much too long to count, they decide to try estimating instead. They notice that by grouping or “clumping” the gollywomples and then the trees, they can make short work of finding out about how many gollywomples will need to be picked and packed.

The monsters will make several estimates during this episode and challenge children to try estimating. They will also explore counting by five, ten and twenty-five. Join the monsters as they estimate their way through Aunt Two Lips’ gollywomple orchard.

Our field trip takes students to meet an officer with the US Wildlife Service. He discusses the importance of estimation in his work.



Addison

PREVIEWING ACTIVITIES

PREVIEWING ACTIVITY ONE

Sideline Suggestions

When students are given the opportunity to practice their estimation skills, they can learn how to make decisions and take appropriate risks in mathematics.

YOU WILL NEED:

an estimating jar and copies of black-line master #1 My Estimation Log

If you don't already have one in your classroom, now would be a great time to introduce and estimating jar. This activity can slide right into your morning meeting or circle time.

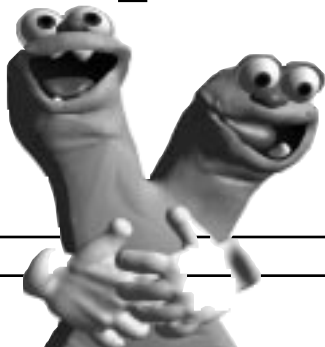
- **Each morning put a certain number of objects into the jar**, use larger objects one day and smaller objects the next. Let children contribute objects from home (a rock

or marble collection) as they become familiar with the function and object of the daily exercise.

- **When children enter the classroom they should write their estimate on their estimation log located next to the jar.** As part of your group meeting you can discuss the estimates and what led students to their guess. Students can take turns verifying the number of objects in the jar each day by counting in a variety of ways.

PAUSE POINTS

PAUSE POINT ONE



The monsters first question will follow them throughout this entire episode. They need to know how many boxes they will use for packing gollywomples. Here they need to consider the possible ways they can figure this out. Ask students to

consider the obvious solution, counting, and then try to stretch their thinking and encourage them to come up with any other creative ideas for finding out how many boxes the monsters need.

PAUSE POINT TWO

Counting each and every gollywomple is taking too long, so Aunt Two Lips suggests the monsters try estimating. **Talk with your students**

about what they think it means to estimate. How do they think this will help the monsters find out how many gollywomples there are in all.

PAUSE POINT THREE

The monsters will need to measure to find out how many gollywomples will fit into a box. **Ask your students to consider things they have tried to**

pack like backpacks, suitcases, or cubbies and desks at school. How do they know what will fit and what won't?

PAUSE POINTS

PAUSE POINT FOUR

Ask your students to think about the reasonableness of estimating that each box will hold about 25

gollywomples. Can the monsters apply their estimating strategy to this measurement challenge?

PAUSE POINT FIVE

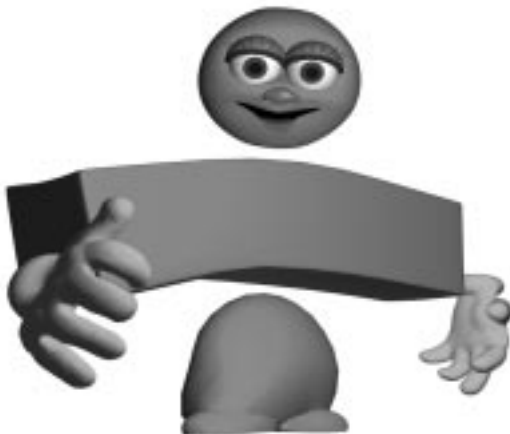
Now the monsters know that there are about fifty gollywomples on each tree because they have estimated. They also know that each box will hold about 25 gollywomples. But still they don't know how many boxes are needed. **Lead your students on a discussion about all of the estimates that have worked so**

far, five gollywomples in a clump, ten clumps in a tree, fifty gollywomples in each tree, and twenty-five gollywomples in a box. Let students suggest what the monsters need to estimate next and how they might go about estimating trees in the orchard.

PAUSE POINT SIX

Allow students to use various tools around the classroom, calculators, counters, pencil and paper for computing the solution to help the monsters. Students should work

with partners or in small groups so that they can discuss possible strategies for using all of the information they need.



POST VIEWING ACTIVITIES

Sideline Suggestions

As students are given opportunities to practice their estimating skills they can gradually become more flexible with their thinking about numbers. Estimating activities can support their developing number sense. Number sense develops as students begin to understand the size of numbers and the many ways that numbers can be represented.

POST VIEWING ACTIVITY TWO Too many to count

Challenge students to create a list of things that would take a very long time to count. Find out from them if any of their objects would require an accurate count (number of lottery tickets sold, number of students

in school today) and which ones lend themselves more to estimating (number of apples in a bushel, number of fans at a ball game). Talk about strategies for estimating numbers with some of their objects.

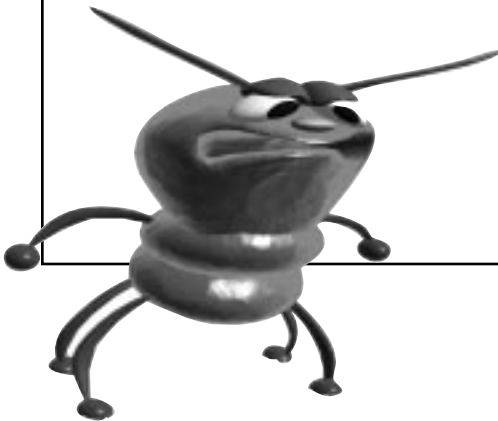
POST VIEWING ACTIVITY TWO Cafeteria count

The school cafeteria can be a busy place during the lunch breaks at most elementary schools. That makes it a perfect setting to try an estimating activity.

- **Ask your students to try counting the number of kids in the lunchroom** the next time they eat there. Discuss with them the challenges they faced in doing this. (kids were moving around a lot, some changed seats, counting the same table twice, too many distractions, etc.) Later, walk with your class to the cafeteria when it is not full of students, but the tables are set up for lunch. Have the students check to find out approximately how many students will fit at one table comfortably.
- **Question your students to find out if they think the table might hold more or less fifth graders than first graders.** Is the number they

originally came up with still a good estimate?

- **Next, check to see how many tables are in a section or row of the cafeteria.** Send teams or partners to the cafeteria to gather any final estimating information, like how many of the tables are full during each lunch sitting for the different grades.
- **Set aside classroom time to try out their estimates.** Make sure they have calculators and manipulatives readily available to help them with their solutions. You should be able to find out from the school secretary how many students are in each grade level lunch group. You can share this information when students are finished. They might enjoy seeing how close they can come when they estimate.



Name: _____

My estimate log

DAY	ESTIMATE
Monday	I estimate that there are _____ in the jar.
Tuesday	I estimate that there are _____ in the jar.
Wednesday	I estimate that there are _____ in the jar.
Thursday	I estimate that there are _____ in the jar.
Friday	I estimate that there are _____ in the jar.





Math Monsters™

presents

AREA

NCTM CONTENT STANDARDS

Geometry

- relate ideas in geometry to ideas in number and measurement

Measurement

- measure with multiple copies of units of the same size
- develop common referents for measure to make comparisons and estimates

NCTM PROCESS STANDARDS

Problem Solving*

Reasoning and Proof*

Communication

Connections

Representation*

**Indicates a strong emphasis in this episode*

OVERVIEW

This episode digs deep into the NCTM process standards as children are encouraged to test and prove the strengths and weaknesses of the monster's blueprints. They need to consider the most reasonable and practical plan for designing a launch for their new rocket ship. As a result of viewing this episode children will:

- develop an understanding of how to find the area by using the length and width of the a square
- relate ideas in geometry to number and measurement concepts
- practice using a hundreds chart and recognize patterns within the chart to predict the order and sequence of missing numbers

VOCABULARY

area length
width square
rectangle sides

PROGRAM SYNOPSIS

Cousin Digit has given the monsters a brand new rocket ship. They can explore places all over Monster Town and beyond. They have just one problem. Before they can launch their ship they need to finish the construction of a launch pad started by Cousin Digit. The launch pad is square and needs to be covered with fireproof square tiles

The monsters will need to think about the shape of the launch pad and its area. To find this they will explore the length and width using tiles, and ultimately will need to know how many tiles must be ordered to cover the entire launch pad. The monsters will also have a chance to explore number patterns on a hundreds chart when their numbered tiles from Annie Ant get a bit jumbled.

Our field trip finds us at a flooring and tile center for a closer look at the concept of area with a real life application. Students will be asked to consider the importance of finding area for different-sized rooms and spaces.



Split

PREVIEWING ACTIVITIES

PREVIEWING ACTIVITY ONE

Seashell coverup

Sideline Suggestions

As children make or draw arrays they learn to organize space and shape. This will support later development in their understanding of grids and coordinates.

- **Take students to a local beach or seashore for a class outing.** You can also use the school playground. Ask them to draw shapes in the sand with rocks or sticks.

On the playground they can use sidewalk chalk. Have students fill in the shapes with rocks or shells

they find. In laying these out the students will cover the surface area of their drawings. They may wish to count the number of rocks or shells it takes to cover their shapes as they explore the concept of area.

PREVIEWING ACTIVITY TWO

Compare the squares

Sideline Suggestions

For young children spatial visualization can be developed by building and manipulating concrete objects.

YOU WILL NEED: copies of the blackline master Area #1 Square Tiles, and color tiles or squares

- **Use color tiles or squares to cover each of the monsters shapes.** Have students compare the number of tiles they used with each monster's

shape. How does this help them to know which shape is bigger or smaller? Ask students to think of some problems in which they might need to know how much flat space there is to be covered.

PAUSE POINTS

PAUSE POINT ONE

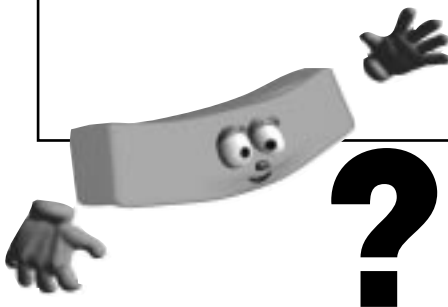
The monsters need some ideas for how they can find out how many tiles are needed to cover the entire launch pad. **Allow students to brainstorm their problem solving ideas**

that may help the monsters. Help students to recognize the importance of knowing both the length and the width of the launch pad.

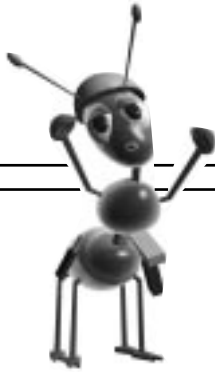
PAUSE POINT TWO

Why do the monsters find only nineteen tiles if both sides of the square are the same size? This would be a great activity to actually **stop the program and let students test for**

themselves. The squares they measure can be smaller and classroom color tiles or squares can be used to simulate the monsters' dilemma.



PAUSE POINTS



PAUSE POINT THREE

Again, this would be a great opportunity to **stop the program and let students draw their own “blueprint” or plan for the launch pad.** Let stu-

dents compare their designs and answers for the number of tiles needed.

PAUSE POINTS FOUR AND FIVE

The monsters have jumbled their tiles and are not sure where the next tile will go. If your students are familiar with using a hundreds chart, they may find solving this problem easy. If not, **support stu-**

dents as they try to continue the pattern of numbers on the launch pad by providing them with a completed hundreds chart or board in the classroom.

POST VIEWING ACTIVITIES

POST VIEWING ACTIVITY ONE Squares

Students can play this game in groups of two or more. The object of the game is to connect dots, one line at a time, and make squares.

YOU WILL NEED: copies of the blackline master #2 Dot Grid

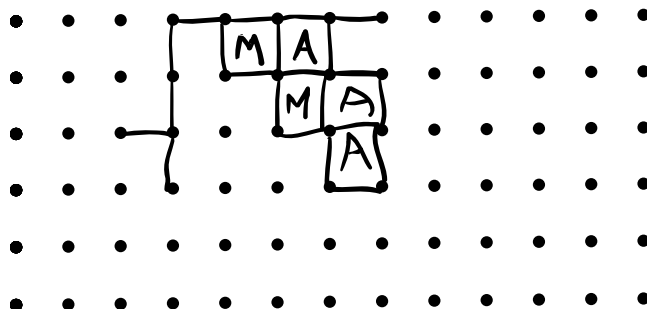
- **Make copies of the blackline master Area #2** that has the grid of dots. The first player will draw a line to connect two dots. The next player will do the same thing.
- **As the grid gets filled in with lines, the students will be able to complete a square and put their initial**

inside. Each time a square is completed, the player may draw another line connecting two dots. Students may even be able to complete several squares in only one turn.

- **When all the squares are completed, players count up the number of squares that have their initial inside.** The student with the most squares completed wins.

Sideline Suggestions

When students are given opportunities to visualize numbers in a geometric sense, as they model arrangements of the same number with square tiles, they may also begin to make connections to area.



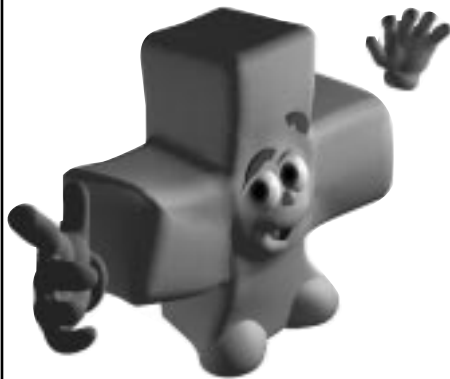
POST VIEWING ACTIVITY TWO

Finding area is as easy as length X width

Sideline Suggestions

Sometimes it's best not to emphasize various units of measurement too soon in measurement instruction. Go at a pace you feel is appropriate for your students.

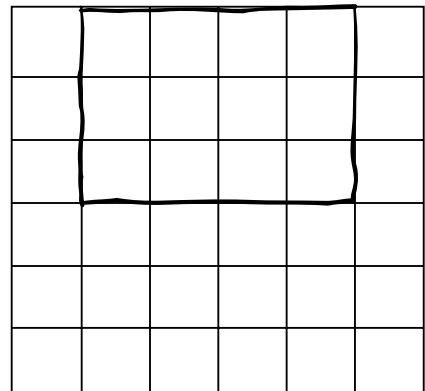
You also might have children trace and cut out an outline of their own foot or hand to use for measuring.



The objective of this activity is for students to create squares and rectangles that represent arrays. This introduces them to multiplication through repeated addition. Students can pair up for this activity.

YOU WILL NEED: one number cube for each child (dice), copies of blackline master #3 Grid Paper or graph paper, colored pencils or crayons, a highest/lowest spinner (optional)

- **The first child rolls the number cube.** Using a crayon or colored pencil he/she will need to trace a line (vertical) on the graph paper that is as many squares long as the number they rolled on the cube. The next student takes a turn and does the same on their own piece of graph paper.
- **The first student now rolls the number cube again,** this time making a line (horizontal) as many squares long as the number on the cube. The first player has now determined length and width and should be able to add in the missing lines to close the square or rectangle. The second player will do the same, rolling the number cube, drawing the horizontal line, closing in the square or rectangle.



$$3 \times 4 = 12$$

- When both players have completed their shapes, **they need to find out how many squares they have enclosed inside their larger shape.** They can represent their work under their shape writing the number of squares or using developmentally appropriate number sentences. Some students will be able to write addition equations with several addends and some may represent their work in a multiplication equation.
For example:
 $12 \quad 3+3+3+3=12 \quad 4 \times 3=12$
 $4+4+4=12 \quad 3 \times 4=12$
- **The winner can be the student with the highest or lowest number of squares in the round.** The students can decide whether higher or lower wins the round at the beginning. They should do this after each round and play until they have filled their graph paper with squares and rectangles.

POST VIEWING ACTIVITY THREE

Hundreds chart patterns

YOU WILL NEED: copies of the blackline master Area #4 hundreds chart

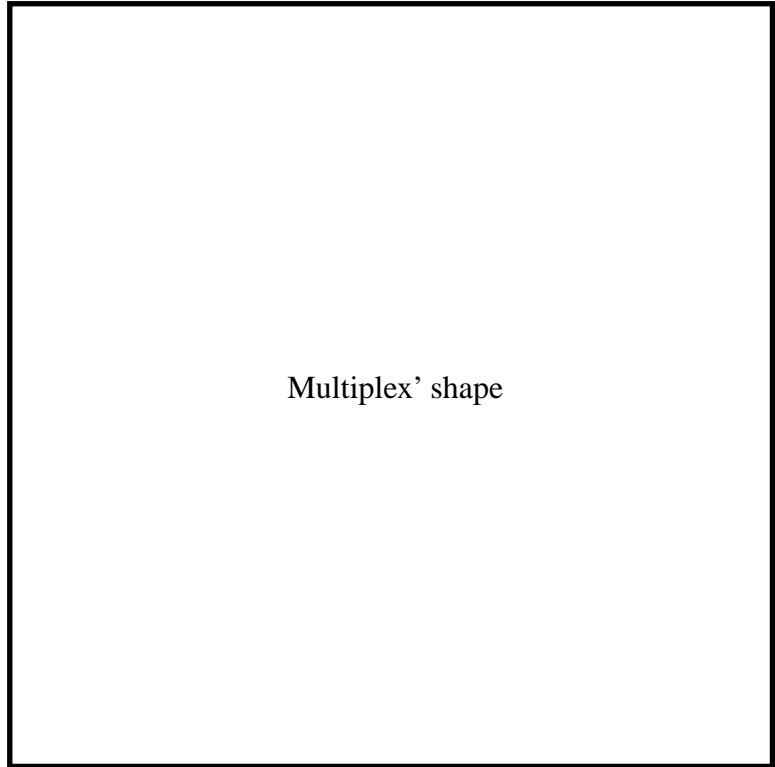
- **Using the hundreds chart (or one you have students create themselves) challenge students to explore and make predictions about the various patterns made by numbers on the chart.** You could have children shade in numbers on the chart to reveal even numbers, odd numbers, numbers ending with “0” or “5,” etc. Ask

students to try these and look for more patterns.

- **Give students a chart with missing numbers and see what their predictions are for the empty squares.** Do the patterns they’ve discovered help them to make new predictions?

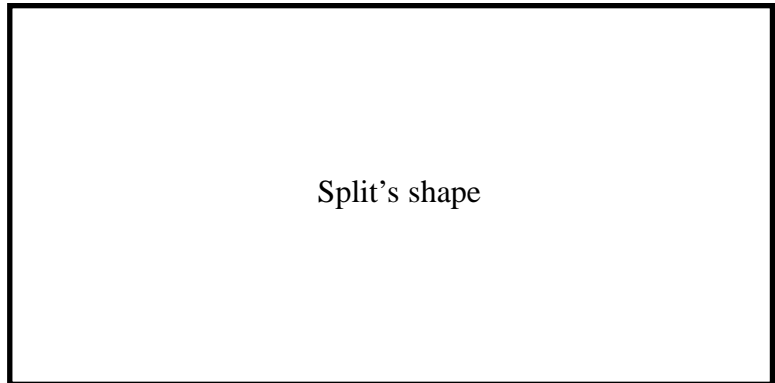
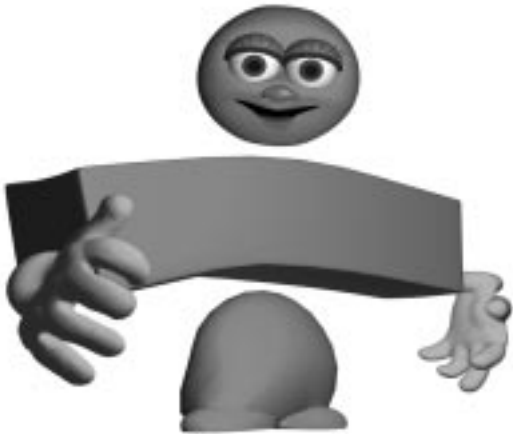
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

SQUARE TILES



Multiplex' shape

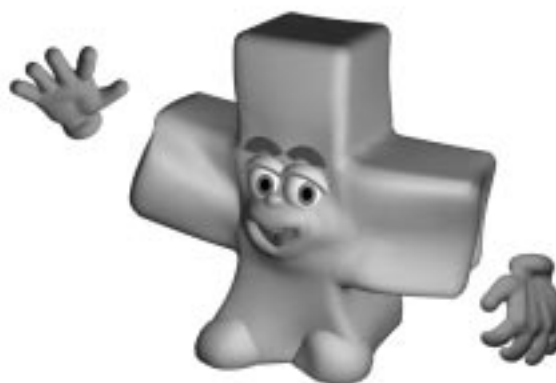
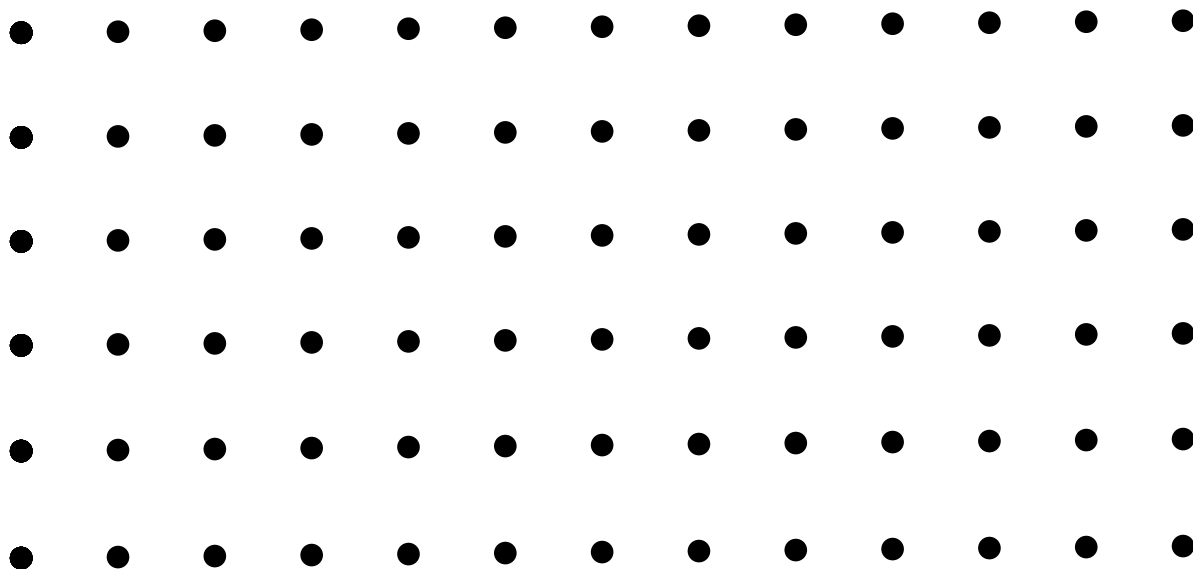
How many square tiles do you need to cover Multiplex' shape? _____



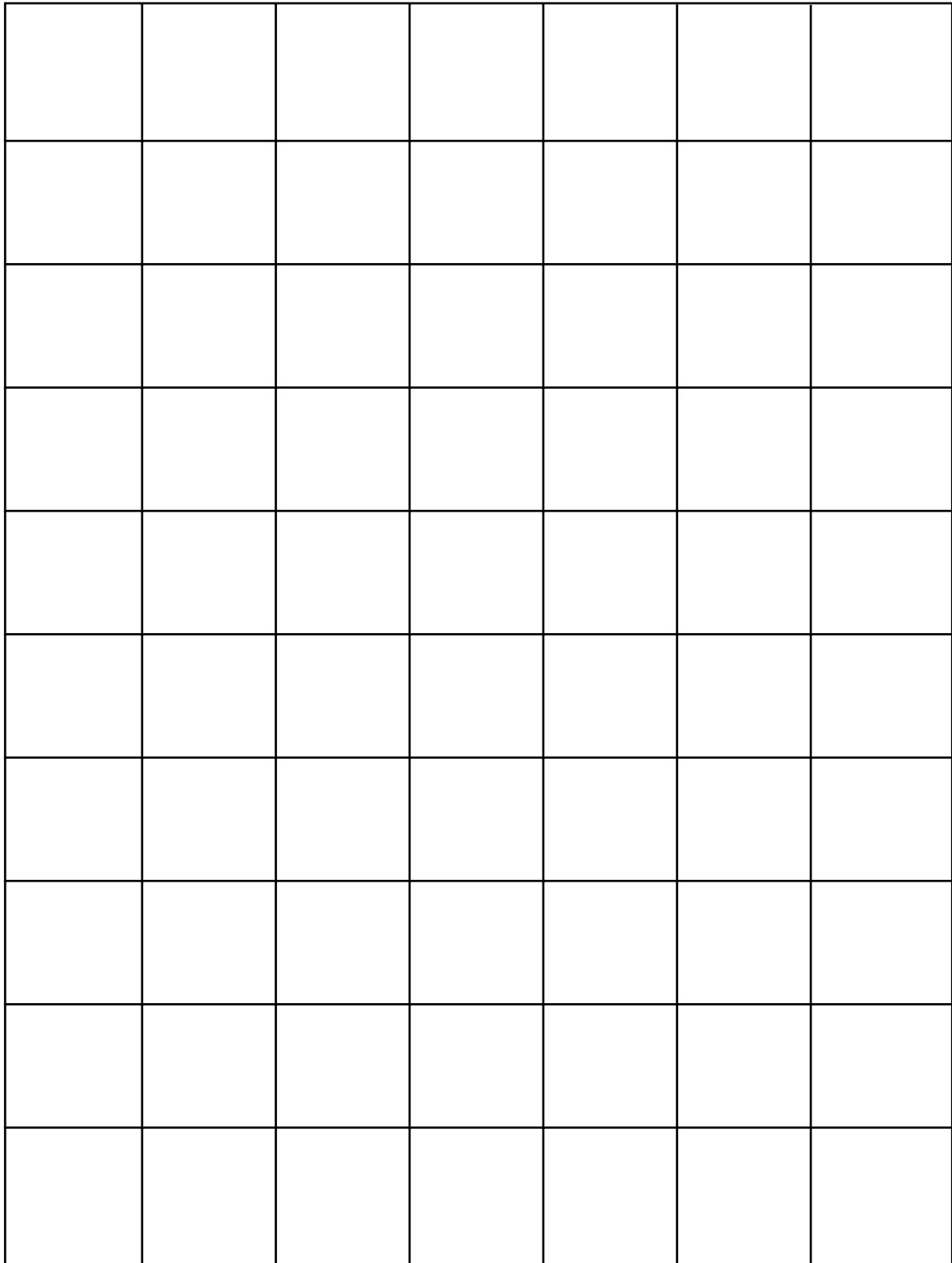
Split's shape

How many square tiles do you need to cover Split's' shape? _____

DOT GRID



GRID PAPER



HUNDREDS CHART

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Math Monsters™

presents

LANDMARK NUMBERS

NCTM CONTENT STANDARDS

Number and Number Sense

- develop understanding of the relative position and magnitude of whole numbers

Geometry

- describe, name and interpret direction and distance in navigating space and apply ideas about direction and distance
- find and name locations with simple relationships such as “near to”

NCTM PROCESS STANDARDS

Problem Solving*

Reasoning and Proof

Communication*

Connections

Representation

**Indicates a strong emphasis in this episode*

OVERVIEW

In this episode, the Monsters figure out how to help Multiplex, the tow truck driver, find the breakdowns on the road. They explore the concepts of Landmark numbers, number lines and the notion of integers. As a result of viewing this episode, the children will:

- recognize multiples of ten as important Landmarks on a number line
- identify locations on a number line between and including Landmarks
- discover the importance of knowing “which way” and “how far” when using a number line

VOCABULARY

landmark numbers

“Positivity City”

“Negativityville”

zero

PROGRAM SYNOPSIS

Multiplex’ new job as a tow truck driver has him puzzled, because when someone calls for help, he can’t seem to find them. The Math Monsters try to figure out a way to help Multiplex find the breakdowns.

Addison suggests that they put a numbered sign up at each Monster meter from the castle. The drivers can tell Multiplex the number written on the sign nearest to them. Mina reminds the Monsters that the road goes in two directions from the castle, one way to Positivity City and the other to Negativityville, and both directions should be marked.

The Monsters begin placing a sign at every Monster meter but the work is exhausting. They decide that it is more efficient to place signs at 100, 500 and 1,000 meters. But the signs are so far apart they

don’t help Multiplex.

They figure out that if they mark every ten Monster meters using the landmark numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100, Multiplex will find the breakdowns more easily.

But he is unable to find a breakdown at marker 20 because the driver at marker 20 is on the road to Negativityville and not the road to Positivity City. So the Monsters agree to paint the landmark signs heading toward Positivity City green and the signs heading toward Negativityville blue. But what about the the castle? How should it be marked? The monsters will figure that out, too.

The field trip takes us to a television station to visit a meteorologist. The weatherman uses positive and negative numbers to report the temperatures. This field trip connects the number line concept to a real life application familiar to

PREVIEWING ACTIVITIES

PREVIEWING ACTIVITY ONE

Sideline Suggestions

Teachers can extend young mathematician's knowledge of relative position in space through conversations and demonstrations. Use this activity to help them understand that by numbering more of the cups, but not all of them, they can provide clues using language such as, "beside," "between," "far" and "near" to express location.

Where Is It? is a game of communication.

YOU WILL NEED: twenty paper cups placed upside down in a line with a number 1 on the first cup and a number 20 on the last cup; a small object such as a ball of clay, toy or coin

- **The students should cover their eyes while you place the small item under one of the cups.** Tell the students that the item is hidden under one of the cups between 1 and 20. The object of the game is to ask as few questions as possible to find out which cup is covering the object.

- Because the students have so few clues they will begin to guess without reasoning. **Ask them what could be done to give them the information they need to ask good questions.** How can we make this a thinking game instead of a guessing game without numbering all of the cups?
- **Try some of the students ideas.** Guide them in discovering that numbering every other cup or every fifth cup will help them ask the questions that will help them find the hidden item quickly.

PREVIEWING ACTIVITY TWO

Sideline Suggestions

Navigation is a mathematical concept involving direction, distance, location and representations. This activity is designed to help young children understand the problems faced by the Monsters in this episode and to spark their thinking about landmarks as key "places along the way."

- **Take a field trip to the front of your school.** Ask your students to pretend they are in a car or on a bus. If the vehicle turned right, name some of the places you would see. If the vehicle turned left, name some of the places you would see. Help your students understand that the road goes in two directions from the school.

- **Now ask them to think about one of the far away places they named.** Ask your students to name some of the landmarks between the school and the far away place.



PAUSE POINTS

Sideline Suggestions

This is a good opportunity to talk with your students about the need to have enough information when solving a problem. Role play with your students to demonstrate how a lack of information leads to misunderstandings. Try placing a familiar object in the classroom where it can be found with a few clear directions. Give a very general clue telling your students where to find the object. For example, “over there” or “up high” and then offer them more specific directions to help them find the object easily. Talk about the differences in the information you offered.

PAUSE POINT ONE

Multiplex receives a call from a driver with a flat tire. He tells Multiplex that he is beside a green tree. Monster town has many green trees and Multiplex drives up and down the road looking but he never

found the driver. Mina thinks he drove in the wrong direction. Addison thinks he didn't drive far enough. **Allow students to develop problem solving ideas** that may help Multiplex find out how far to drive.

PAUSE POINT TWO

After deciding that it was too exhausting to place a sign at every Monster meter, Basehound suggests they place a sign every hundred meters. When a call comes in for Multiplex, the monsters use the clues to figure out that the break-

down is between 10 and 100. That is a long, long way and they decide the numbers are not helping very much. **Ask the students to help the Monsters figure out what they can do.**

Sideline Suggestions

Your students will benefit from having a number line to refer to during these pause points.

Before viewing this episode, ask your students to construct the number lines from the blackline masters in this guide. Or your students may use meter sticks.

PAUSE POINT THREE

The monsters place a sign every 10 Monster meters. The next call that Multiplex receives is from a driver

between sign 50 and 60. **Ask the students where the driver with the break down can be found?**

PAUSE POINT FOUR

It is getting dark. Mina calls Multiplex and asks for a ride back to the castle. She reports her position as two Monster meters away from

30. Multiplex is puzzled when he cannot find Mina 32 Monster meters from the castle. **Ask the students why Multiplex could not see Mina.**

Sideline Suggestions

The notion of integers is embedded in this episode. Some everyday uses that may be familiar to young students are temperatures on a thermometer, elevations above and below sea level and score keeping procedures in games that allow you to go “in the hole.”

PAUSE POINT FIVE

When a call comes from sign number 20, it sounds like an easy breakdown

to find. But the car is not there. **Ask the students why.**

PAUSE POINT SIX

The numbers on the signs from the castle to Positivity City are the same as the numbers going from the cas-

tle to Negativityville. **Ask the students how can the drivers who need help tell Multiplex where they are.**

POST VIEWING ACTIVITIES

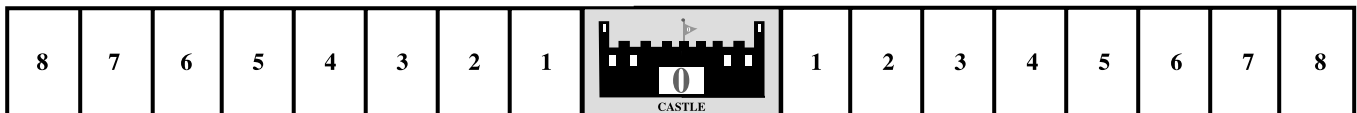
POST VIEWING ACTIVITY ONE Building a Monster Town Road model

A model of Monster Town Road will give your students a concrete representation of the number line in the episode.

YOU WILL NEED: Landmark blackline masters #1–6, student scissors, glue sticks and coloring tools for this activity.

- **Guide your students in building a model of the Monster Town Road.** Cut out the number line and glue the tabs together to create a road to Positivity City from 1 to 100 and Negativityville from 1 to 100. The picture of the castle on Landmark blackline master #3 belongs in the middle. (Save the figure of Multiplex for Post Viewing Activity Two.) Glue the tab to the back of the castle so that the two number lines extend out opposite of one another.

- **Ask your children to draw a line under the numbers or color the direction going to Positivity City in green and the road to Negativityville in blue.** Use the same landmarks as the monsters to count to 100 by tens. Explore the different sets of landmark numbers that the monsters could have used such as 5s or 25s. Ask your students why they think these numbers were not used by the Monsters to mark the road.
- **Now put a red box around each of the landmark numbers used by the monsters.** What number did the monsters use to mark the castle? Use the model of Monster Town Road to discuss how many roads go in two directions from one point.



POST VIEWING ACTIVITIES

POST VIEWING ACTIVITY TWO Multiplex to the rescue!

Sideline Suggestions

This activity offers a wide range of flexibility to meet your students developmental learning needs. Create the emergency calls for Multiplex to match the challenge level of your students. Have fun giving them the opportunity to ask you questions when your directions are purposely vague. What would you ask the caller before you headed out on the road to find them?

Multiplex to the Rescue is a number line game for the whole class.

YOU WILL NEED: Your students will need the Monster Town Road number line from Activity One. In addition, your students will cut out the Multiplex marker from the blackline Landmark master #3.

- **Give your students directions and send Multiplex to the Rescue from his castle headquarters.** For example, "Hello, is this Multiplex Tow? I have a flat tire and I am between

the green sign 20 and the green sign 30." Your students then move the Multiplex marker to the number 25. The teacher may keep this activity simple by having Multiplex always begin his rescue mission from the castle. Or, the emergency call created by the teacher can easily lead the students to thinking about "which way?" as well as "how far?" by moving from one emergency call to another.

POST VIEWING ACTIVITY THREE Can you find Multiplex on the road?

Sideline Suggestions

The challenge level of all post viewing activities is flexible. You may limit the number line that your students work by simply folding or cutting in shorter. For example, it may only span as far as 10 or 20 or perhaps 50 in each direction.

Can You Find Multiplex on the Road? is an activity in communication and reasoning.

YOU WILL NEED: each student needs a Monster Road Number Lines from Activity One, one Multiplex marker from Activity Two and a set of beans or small chips as markers.

- **Working in teams, the students will sit back to back with their number line in front of them.** One student will place the Multiplex marker on their number line and keep the location a secret. The second student will ask yes or no questions to try and find the secret location of the Multiplex marker on their partners number line. The student asking questions will use the beans or chips to mark the places on the number line that their questions have eliminated as possible locations.

For example, a student begins the game by placing the Multiplex marker on the green number 30. The second student asks, "Is Multiplex on the green road?" Because the answer is yes, all numbers on the blue road are eliminated. In this case the student will not need to mark all of the numbers on the blue road. But, remember that Multiplex is not on a blue number. The the student may ask, "Is Multiplex on a number higher than 50?" A yes or no answer will eliminate another 50 possibilities. Through the process of elimination, the student asking questions will find the secret location of the Multiplex marker. Ask your students to play the game several times. Discuss the strategies they used to help them find the Multiplex marker more quickly.

POSITIVITY CITY NUMBER LINE

Glue tab for Castle	1	2	3	4	5	6	7	8	Glue tab
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	9	10	11	12	13	14	15	16	17	Glue tab
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	18	19	20	21	22	23	24	25	26	Glue tab
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	27	28	29	30	31	32	33	34	35	Glue tab
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POSITIVITY CITY NUMBER LINE

36	37	38	39	40	41	42	43	44	Glue tab
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45	46	47	48	49	50	51	52	53	Glue tab
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54	55	56	57	58	59	60	61	62	Glue tab
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63	64	65	66	67	68	69	70	71	Glue tab
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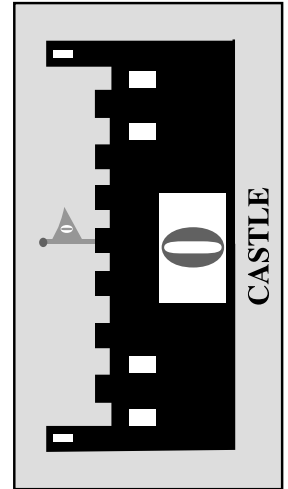
POSITIVITY CITY NUMBER LINE

72	73	74	75	76	77	78	79	80	Glue tab
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81	82	83	84	85	86	87	88	89	Glue tab
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90	91	92	93	94	95	96	97	98	Glue tab
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99	100
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MARKER

NEGATIVITYVILLE NUMBER LINE

Glue tab	8	7	6	5	4	3	2	1	Glue tab for Castle
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Glue tab	17	16	15	14	13	12	11	10	9
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Glue tab	26	25	24	23	22	21	20	19	18
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Glue tab	35	34	33	32	31	30	29	28	27
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NEGATIVITYVILLE NUMBER LINE

Glue tab	44	43	42	41	40	39	38	37	36
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Glue tab	53	52	51	50	49	48	47	46	45
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Glue tab	62	61	60	59	58	57	56	55	54
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Glue tab	71	70	69	68	67	66	65	64	63
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NEGATIVITYVILLE NUMBER LINE

Glue tab	80	79	78	77	76	75	74	73	72
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Glue tab	89	88	87	86	85	84	83	82	81
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Glue tab	98	97	96	95	94	93	92	91	90
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100	99
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