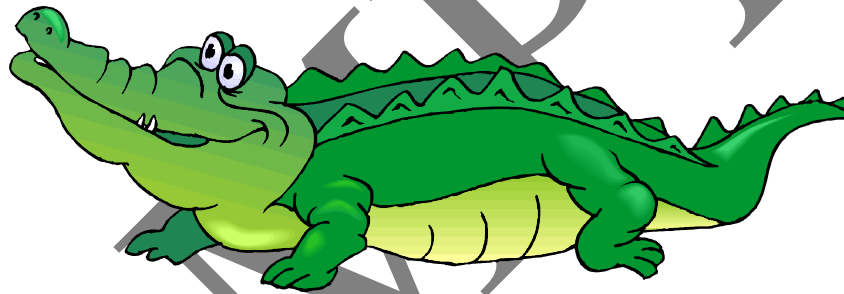


# Choosing Our Zoo Adventure



**MATHEMATICS**

**GRADE 1**

**Item # 1.1.01**

**TEACHERS GUIDE**

# Choosing Our Zoo Adventure

Mathematics

Grade: 1

## OVERVIEW / CONTEXT

This task correlates with our animal study unit and/or trip to the zoo. Your class is going to make choices in preparation for a visit to the zoo. They will have to make individual and group choices in preparing and going to the zoo. The zoo has five main areas to see. The mathematics activities relate to: Choosing, tallying, constructing a bar graph, computation- pre-division, math communications-explaining answers, using maps, greater than, less than, equal in real world situations.

## STANDARDS: *Numbers and Numeration*

1.1.01 Estimate amounts using terms: about, near, closer to, between, more than, less than.

## *Whole Number Operations*

2.1.06 Create and solve a story problem involving addition and subtraction using manipulatives, drawing pictures and writing number sentences.

## *Whole Number Computation*

3.1.02 Use mental mathematics to calculate change from \$10.00.

3.1.05 Multiply with two or three digit numbers by a one digit number with regrouping.

## *Measurement*

5.2.23 Write, illustrate and solve real life problems involving amounts of money up to and including \$4.99.

## *Statistics and Probability*

6.1.02 Interpret and describe data on a bar graph, pictograph, and tally table orally and in written form.

6.1.03 Create a bar graph to display information when given a grid.

6.1.04 Create a tally table to display information when given a grid.

6.1.05 Collect data by observing, surveying, measuring and counting amounts up to 100.

## ACTIVITIES: 5

## RECOMMENDED USES:

Diagnostic

✓ Formative / Learning Activity

✓ Summative

**VOCABULARY:** Choice, guess, tally mark, survey, least, most, bar graph, favorite, meter (m), perimeter, entrance, path/paths, shortest, longest, point, difference, distance, station, times, dime, nickel, price list, pennant, most, least, exactly, item.

**MATERIALS:** A chart of the Zoo's 5 main areas or Transparency of blackline chart provided, Markers, Tally Chart-teacher-made on chart paper, Pencils, Different color crayons, Bar graph provided for each child, Student map, Transparency of map or teacher made chart of map (optional), Calculators Workmat (optional), Student response forms for lessons 1,2,3,4 & 5 Transparency of train track, Counters, Play money, Transparency of price list (lesson 5) or teacher-made chart

**APPROXIMATE TIME: 5 – 50 MINUTE SESSIONS**

## TEACHER GUIDE

### TITLE: CHOOSING OUR ZOO ADVENTURE



#### ACTIVITY 1

#### STANDARDS / BENCHMARKS

6.1.04

6.1.05

In choosing our adventure, our class has many choices to make about where to visit and what we might see and do on our trip.

The zoo has five main areas to see. These areas are:

1. The Children's Zoo
2. The Bear's Den
3. The Monkey Area
4. The Reptile House
5. The African Area

We will learn how to use our math skills to help as we make some choices.

A. After finishing our animal unit we will plan an adventure at the zoo. The zoo has five main areas to see.

1. The zoo is a very big place, much larger than our school because of this our class needs to stay together while we are at the zoo. Look at the chart, place a check mark where you would like to visit first.

**Exemplary Response:** One of the five main areas.

2. Guess, which parts of the zoo most of the class would, like to visit first. My guess is: \_\_\_\_\_

**Exemplary Response:** Answer will be one of the five main areas.

B. Our class has to decide which area of the zoo we will visit first. Everyone has agreed we will go to the area that the most of the students in the class like best. Our teacher will help to survey our class to find out which part of the zoo everyone likes the best. We will place tally marks in the chart below to record our votes. Mark the chart at your seat to match the chart we do together. Now count the number of tallies for each area and write the number in the column to the right.

Zoo Area	Tallies	Number of Tallies
The Children's Zoo		
The Bear's Den		
The Monkey Area		
The Reptile House		
The African Area		

**Exemplary Response:** Students will record tallies on response sheet. Students will write numerals to represent tallies recorded.

#### TEACHER NOTES:

A. You will tell the class that they are going to pretend to visit the zoo. You will display the chart of the zoo areas. Read the name of each of the areas and explain that each part of this zoo has certain types of animals. Tell your students that one animal from each area was chosen to represent that area. Lead them through Activity A 1&2.

B. Read the directions on the student response sheet. As a lead you might want to say, "How can we find out if your guess is right?" We could do a survey. We could make a tally chart. Teacher will call on one student at a time to come up and make his tally mark for his choice. Students will also make approximate marks on their own response sheet. Allow some time for the students to express their choices and why they chose that area. (Teacher should be aware of peer influences. Make sure the students do not change their choices when making their tallies at their seats. Allow time for students to count and mark their count of the tallies in the right hand column. Evaluate using the rubric below.

EVALUATIVE CRITERIA / RUBRIC	
All tallies recorded correctly and correct number of tallies indicated	2
All tallies recorded correctly but number of tallies column has one error or more	1
Errors in tallies and number of tallies; blank or illegible	0

## TEACHER GUIDE

### TITLE: CHOOSING OUR ZOO ADVENTURE



#### ACTIVITY 2

1. What part of the zoo did our class choose to go to first?

**Exemplary Response:** Answer will vary according to your class preference.

2. Is that what you guessed? Circle your answer YES / NO

**Exemplary Response:** Students will compare their guess with class choice and circle Yes or No.

3. What part of the zoo did your class like the least?

**Exemplary Response:** Students will use bar graph to determine the least liked area of zoo, and then write the name of the area.

4. How did you get these answers? Write a sentence or two to explain.

**Exemplary Response:** I looked at the bar graph and found the longest (or biggest) row of blocks and I knew it was the most.

I looked at the graph and found the shortest (or smallest) row of blocks and I knew it was the least

Students should also use numbers to explain. e.g. “12 is the biggest,” or “2 is the smallest.”

5. What area of the zoo will your class visit first?

**Exemplary Response:** Students should write the area that has the highest response.

6. How many more students wanted to go to this area than to the least favorite area?

**Exemplary Response:** Student has to show subtraction of the smallest from the largest. i.e.  $12 - 2 = 10$

7. Write a number sentence to show how you got this answer.

**Exemplary Response:** Students must show a number sentence with subtraction. e.g.  $12 - 2 = \underline{\quad}$

#### STANDARDS / BENCHMARKS

6.1.02

6.1.03

3.1.02

#### Reasoning - Embedded

#### TEACHER NOTES:

Review the tally chart you and the children completed in the previous activity. Discuss with the children how it might be easier to use the information from their tally chart in a bar graph. Tell the children to color their own bar graph to match the information from the class tally chart. They may choose to use different colors if desired.

1 – 4

EVALUATIVE CRITERIA / RUBRIC	
Student constructs bar graph which accurately reflects tallies from Activity 1, smallest number from class tally listed for “least” categories explanation indicates understanding of determination of “least”	<b>3</b>
Smallest number from class tally listed for “least” category; explanation indicates understanding of determination of “least”	<b>2</b>
Correct number listed but explanation unclear or blank	<b>1</b>
Incorrect number; unclear explanation; blank or illegible	<b>0</b>

5 – 7

EVALUATIVE CRITERIA / RUBRIC	
Calculation correct and subtraction as operation choice in correct number sentence	<b>2</b>
Calculation correct but number sentence incorrect	<b>1</b>
Incorrect calculation and number sentence; blank or illegible	<b>0</b>

## TEACHER GUIDE

### TITLE: CHOOSING OUR ZOO ADVENTURE ACTIVITY 3

### STANDARDS / BENCHMARKS

1.1.01

Reasoning - Embedded

2.1.06

3.1.02

#### TEACHER NOTES:

- A. Teacher needs to make a chart of the map or use an overhead with a transparency of the map to display before the total group. Hand out individual maps to students. How do maps help us? Ask the class why we might need maps of the zoo? Introduce the lesson by talking about value of having a map and how it helps you find your way around a new place. Then show the zoo map, and ask the children to find the different areas. Introduce the word 'path' and show what a path is on the map. Explain that the numbers on the map represent the distance between two points and that we are using meters as our measurement unit. Pass out calculators and have the student's practice finding the distance for several paths.
- B. Tell the students that they are going to work in cooperative groups. Divide them into groups and assign 1 as the leader, 1 as the recorder, and 2 or 3 as the reporters. Tell each group their responsibilities:  
The Leader makes sure the group stays on task.  
The Recorder writes down the group's answers.  
The Reporters gather the information  
Once the groups are established, pass out student response forms, maps, crayons and calculators. Teacher reads response sheet out loud to students. Students work in-groups to answer questions. Have reporters share their findings with the class.

- A. Now that your class has decided where to visit first, your teacher has a map for you to use. It shows all the areas you are going to visit and how far you have to walk.

Group Leader \_\_\_\_\_

Group Recorder \_\_\_\_\_

Group Reporters \_\_\_\_\_

1. a. Is there more than 1 way to go from the entrance to the class's first choice area? YES NO

**Exemplary Response:** Yes

- b. Trace over the different paths to get to this 1<sup>st</sup> choice.  
Use a different color crayon to show each path.

**Exemplary Response:** Look at each group's map for different colored paths.

- c. How many ways did your group find?

**Exemplary Response:** Group should find at least three different ways.

2. a. From the entrance what is the color of the longest path your group found to this 1<sup>st</sup> choice?

**Exemplary Response:** Color should correspond with longest path. Child will write color word.

- b. Write how long this path is \_\_\_\_\_m

**Exemplary Response:** Answers will vary according to choices made.

- c. Write a number sentence to show how you got this answer.

**Exemplary Response:** Student will add numbers to find the total distance (e.g. Children's Zoo  $7+12+15+20=$ \_\_\_\_)

2. a. From the entrance what is the color of the shortest path your group found? \_\_\_\_\_

**Exemplary Response:** Color will correspond with the shortest path.

- b. Write how long this path is \_\_\_\_\_m

**Exemplary Response:** Answers will vary according to choices made.

- c. What is the difference between these 2 paths? Use a calculator to solve. \_\_\_\_\_m

**Exemplary Response:** The answer will be the difference of the responses from 2b and 3b. e.g.  $55-17=38$ m

- B. 1. We want to use our time wisely. Now that we have visited our first choice, where would we go next? Why? Explain your answer.

**Exemplary Response:** i.e. We will go to the Reptile House because it is the closest/nearest. "We will go to the Reptile House because it is only 8m from the African Area" 8 is less than 20.

Accept any answer if an explanation is given stating why they want to go there. i.e. I'd go to the Bear's Den because I've never seen a bear.

2. Time is running out. We want to use the shortest paths. If you are at the Monkey Area, would it be closer to go to the Reptile House or Bear's Den? Why? Explain your answer.

**Exemplary Response:** The Bear's Den. It's closer. 13 is smaller than 14.

3. How far would you walk, if you walked all the way around the perimeter of the Zoo?

**Exemplary Response:** 72 m.

#### A. 1.

EVALUATIVE CRITERIA / RUBRIC	
Response is yes; at least two paths are colored	1
Incorrect response; less than two paths; blank	0

#### A. 2.

EVALUATIVE CRITERIA / RUBRIC	
Correct measurement in meters indicated for path chosen; color chosen corresponds to longest path; number sentence correct	2
Correct measurement and correct color chosen; or correct number sentence	1
Incorrect measurement and number sentence; no response	0

#### A. 3.

EVALUATIVE CRITERIA / RUBRIC	
Shortest path correctly indicated; correct measurement given, both differences correctly calculated	3
Shortest path correctly indicated; correct measurement given; one difference correctly calculated	2
Shortest path correctly indicated but measurement and differences incorrect	1
Path, measurement, differences incorrect; blank	0

#### B.

EVALUATIVE CRITERIA / RUBRIC	
Explanation given for 1 is supported with reason; Bear's Den is chosen for 2 and explanation supports answer; 72m is given for 3.	3
Answers for 1 and 2 are correct but explanation is unclear, non supportive or missing; 72m is given for 3.	2
Answers for 1 and 2 are unclear, blank, or unacceptable; 72m is given for 3.	1
Two or more answers for 1,2 and 3 are blank or incorrect	0

## TEACHER GUIDE

### TITLE: CHOOSING OUR ZOO ADVENTURE

#### ACTIVITY 4

We are planning to take a train ride while visiting the Children's Zoo Area. Students will work individually to answer the questions that you will read out loud to them.

- A. 1. While our class is at the Children's Zoo, the teacher says we can ride the Children's Train. If 27 students go to the zoo and each train car holds 5 students how many cars would our class need to ride together?

**Exemplary Response:** Students should use work mat and set out counters to show each car of five until they get to 27.

2. Draw a picture to show your answer.

**Exemplary Response:** Each student should draw a picture of his/her answer.

3. Write a sentence to tell how you got your answer.

**Exemplary Response:** I drew circles until I used 27. Then I put them in-groups of 5 and drew a box around them. I made 5 boxes and had 2 left over. That makes 5 and 1 more which is 6.  
Or  
I drew groups of 5. I counted 5, 10, 15, 20, and 25. Then I drew 2 more to make 27.

- B. Look at the picture of the train track at the Children's Zoo. Use the calculator to figure out the total distance the train travels for 1 trip.

**Exemplary Response:** 26 m.

- C. It takes 10 minutes for the train to go around the Children's Zoo one time. How long will it take the train to go around if you decide you want to ride it two times? Write your answer using a number sentence.

**Exemplary Response:**  $10 = 10 = 20$

- D. 1. Your teacher says it is getting late and you only have 15 minutes left before you have to go. How many times could you ride the train before you have to leave?

**Exemplary Response:** 1

2. Write a sentence to tell why.

**Exemplary Response:** Only 1 because it takes 10 minutes for 1 trip and 20 minutes for 2 trips. 15 is smaller than 20 so I could only make 1 trip. *Or* It takes 20 minutes for 2 trips and 15 is not enough. Just 1 trip.

#### STANDARDS / BENCHMARKS

2.1.06

3.1.05

8.1.08

**Reasoning - Embedded**

#### TEACHER NOTES:

Students will work in pairs. You will distribute workmats and about 30 counters to each pair, and will distribute the student response forms for each child to use. You will read the student response sheets and have the children use the manipulatives to solve problem A. Each student needs to draw a picture of how he got his answer and write a sentence of explanation.

For question B pass out calculators. Have the students look at the map. Read the students response sheet out loud. Emphasize that a train trip begins at the station and ends at the station.

For question C and D read the student response sheet out loud. Allow time for the pairs to solve problems.

A.

EVALUATIVE CRITERIA / RUBRIC	
Workmat used appropriately and picture drawn replicates workmat; answer, 27 is given and explanation clearly supports computation.	3
Workmat used appropriately and picture drawn replicates workmat but answer given is incorrect with unclear or unsupported explanation	2
Workmat use is attempted and picture is drawn but incomplete; answer and explanation unclear and/or incorrect	1
No attempt, blank, unclear explanation, incorrect response	0

B.

EVALUATIVE CRITERIA / RUBRIC	
Child is observed using calculator and total distance computed is correct	2
Child is observed using calculator but computed distance is incorrect	1
No calculator was used and response is incorrect, blank or illegible.	0

C.

EVALUATIVE CRITERIA / RUBRIC	
20 is given and correct number sentence is written	2
20 is given but number sentence is missing or incorrect	1
Blank, illegible, or incorrect.	0

D.

EVALUATIVE CRITERIA / RUBRIC	
1 is given and explanation is complete and clear	2
1 is given; explanation is missing, unclear or incorrect	1
Answer incorrect and explanation illegible, blank or incorrect	0

## TEACHER GUIDE

### TITLE: CHOOSING OUR ZOO ADVENTURE

#### ACTIVITY 5



In this final activity the class is visiting the gift shop. Each student has a set amount of money to spend. There is a price list of items to buy. The teacher will read the questions and the students will solve the problems individually.

A. Which item costs the most?

**Exemplary Response:** Stuffed animal

B. Which item costs the least?

**Exemplary Response:** Postcard

C. If you want to buy 2 items that cost exactly 50 cents what would you buy?

**Exemplary Response:** Coloring book and zoo stickers

D. 1. Pretend you want to buy a pencil, a postcard and a balloon. How much would that cost?

**Exemplary Response:** \$0.30

2. Do you have enough money to buy all three items?

Yes No

How did you get your answer?

**Exemplary Response:** Yes; I took my .50 and subtracted .30  
Or .30 is less than .50; .50 is more than .30; .30 is not as much as .50

#### STANDARDS / BENCHMARKS

5.2.23

#### Reasoning - Embedded

#### TEACHER NOTES:

You will distribute student response sheets and packets of play money (if needed). You will read the response sheet and review the price list with the total group. Some review of money and its value may also be needed.

You will read the questions out loud and have the individual students solved the problem.

EVALUATIVE CRITERIA / RUBRIC	
Answers for all five questions are correct and explanation either in words or diagrams is clearly and correctly presented	2
Answers for at least 3 out of 5 questions is complete; explanation for D. 2 is incorrect, unclear, or missing	1
Less than 3 answers are correct; explanation for D. 2 is incorrect, unclear or missing	0