Instructor’s Manual
(GREEN PAPER)

60 copies, 2-sided, stapled
Please make sure stapling is correct and consistent
Meeting 6 Fall 2017

Flora Adventure
November 8th

Contents

1) Time-Limes
2) Squirrels in the forest

www.math.uci.edu/mathceo

2017 UCI MATH CEO COMMUNITY EDUCATIONAL OUTREACH. UNIVERSITY OF CALIFORNIA AT IRVINE
Flora Adventure (Meeting 6, Nov 8)

☐ Identify the Leader mentor
☐ Write names of any new mentors and students  
   (find form inside folder, write new names if needed)
☐ Place checkmarks in the Meeting 6 column (same form inside folder)
☐ Tell math goals to students in each activity
☐ Call students by name
☐ Keep students silence while doing Quiz
☐ Keep your table neat and clean at all times
☐ Get help if there are behavior problems before they escalate

☐ Quiz PROBLEM 1 (pink) (end of Activity 1)
☐ Student Survey (pink) (start survey at 3:35 PM)
☐ Fill Meeting Report (blue) (if you are the Leader)
☐ Put back into folder: Student Surveys (pink), Meeting Report (blue)
Meeting 4: Flora Adventure

Dear mentor,
In Meeting 4 we will deepen the understanding of multiplicative properties as well as ratio as a tool to explore linear growth. We will also develop variational thinking in the activities.

Activity Breakdown

Activity 1 “Time-Limes” (40 minutes)
Students develop number sense by moving through 5 stations and collaborating together.

Assessment (5 minutes + 5 minutes correction)

Activity 2 “Squirrels in the forest” (25 minutes)
Students use ratios to explore linear growth and study different representations, including tables, bar models and linear graphs. This activity has several small problems surrounding a mathematical situation, and students decide in which order they proceed.

Math Goals

Students compare different numerical expressions described in words and pictures, using multiplicative properties.

Students can use tree representations for counting objects and can represent numerical situations using a tree diagram.

Students can translate different representations of proportionality: tables, bar models, ratios and lines in the xy-plane.

Given a linear model between two variable quantities, students can solve problems involving predictions, finding one quantity given the other and finding each quantity given the total combined.
MATERIALS

- INSTRUCTOR MANUAL
  Green color
- STUDENT WORKBOOK
  White color
- MEETING REPORT
  Blue color
  One per table
  Online meeting report
- STUDENT SURVEYS (INCLUDES QUIZ)
  Pink Color
- WHITEBOARDS
  One per student
- DRY ERASE MARKERS
  A pouch with several

AGENDA

- **2:10 pm** General Introduction 10’
- **2:20 pm** 1) Time-Limes 40’
- **3:00 pm** Quiz: Problem 1 + Solution 10’
- **3:10 pm** 2) Squirrels in the Forest 25’
- **3:35** Student Survey 5’
- **3:40** End of the meeting

Important!

Please count the number of markers in the pouch. Ask the students to return them to the pouches when they’re finished. Make sure that at the end, no kid takes any markers home.

If you are missing any material, please ask one of our assistants and they will be able to help you.

They can also help take your students to the restroom.
INDIVIDUAL ASSESSMENT

- Between activities 1 and 2 there is time for an individual Quiz (PROBLEM 1 IN THE PINK SURVEY). Give students **5 minutes to do both parts A and B** and have them answer individually (in their surveys). After collecting answers, grade them and quickly correct them with the kids (5 minutes).

TIPS

- Build the habit of having students complete the quiz in complete silence and without any help of peers of mentors. This may take a few meetings, but make perfectly clear that we will work with these expectations. Do not ignore this.
- Correcting the Quiz after the students are done can help you check for understanding

BEHAVIOR EXPECTATIONS

If a kid is behaving improperly or disrupting students, or does not follow directions at all, talk to them. If problem persists or is really serious, please let Brandi, Alessandra, Li-Sheng or an Assistant know immediately.

Refer to the expectations matrix and point to it if students are not meeting expectations.
UCI MATH CEO MEETINGS: BASIC GUIDELINES FOR VOLUNTEERS

1. KNOW YOUR STUDENTS
   Call students by their names most of the time: make sure they know your name, talk briefly about their day before you start the math activities.

2. ASK FOR EXPLANATIONS
   Ask students how they got their answers. Say things like “How do you know?”, “Why?”, “Draw a picture”, “Convince me!”, “Can you explain to Juan?”, etc.

3. MOVE & MONITOR
   Move around your table; monitor all students; use an adequate tone of voice; encourage kids to work in teams.

4. CHECK WORK
   Verify that the students write the answers to the problems and that they are correct and complete.

5. AT THE END
   Ask students to fill out the survey individually (no help), and to help pick up trash from the table and floor.

TEACHING TIPS

This icon refers to specific tips which you will find embedded in the booklet activities: procedures, questions to ask to the students, recommended methodologies, and so on.

Example: After you introduce a new concept, it is a good idea to ask students to rephrase the concept, explain it in their own words. You can choose particular students, for example those who are disengaged.

Example: It is convenient to ask one student to read out instructions for a problem or definitions of a concept. This keeps your group focused on the task and improves their reading skills if you give feedback on reading.

1. This icon means that the students should work individually in the corresponding problem, before discussing. Be flexible and adapt to your situation.

2. Activity to be done in pairs

Note: if not specified, the booklet problem can be done as a group activity involving a discussion.
Our Goals:
Use multiplication as a tool to count objects and compare quantities.

Discuss in your group. Everyone talks.

- Explain different ways can we represent the multiplication $6 \times 8$, and different ways to find the value without using the multiplication traditional procedure.

- I want to order a salad. There are 3 options for protein, and 5 options for dressings. How many different options for salad do I have? What if there is a new dressing option? Explain using a counting tree.

- Let $A$ be a natural number. What is larger: $3(A + 1) + 3$ or $6 + 3A$? Can you explain your reasoning using a picture?
Introduction
This is a dynamic collaborative activity. Your students will form a team that will rotate through 5 “stations” (tables, including yours) and spend 5 minutes in each one placing the cards in the timeline according to some rules. At the end, your team returns to the original station and checks the work that other teams did.

Instructions
Start by showing students the three cards from a kit. Explain that each card describes a situation in which there are trees having branches, and branches have limes. The idea is to compare the cards and decide which card corresponds to more limes, without necessarily finding the total number, although that is an option.

Place one card in the lime-line: notice that the lime-line has already a card: put it to the right or left (depending on if it corresponds to more or less limes than the starting card) and explain your reasoning to students.

Materials

- 1 large paper lime-line (with a “More limes” tag) and a card.
- 5 identical kits, each containing 3 different cards describing a situation involving limes (15 cards total)

<table>
<thead>
<tr>
<th>Your table</th>
<th>Codes of the cards you receive (please check)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1, A6, B1 or B6</td>
<td>E3, E8, E14</td>
</tr>
<tr>
<td>A2, A7, B2 or B7</td>
<td>E1, E4, E16</td>
</tr>
<tr>
<td>A3, A8, B3 or B8</td>
<td>E6, E12, E13</td>
</tr>
<tr>
<td>A4, A9, B4 or B9</td>
<td>E5, E10, E15</td>
</tr>
<tr>
<td>A5, A10, B5 or B10</td>
<td>E7, E9, E11</td>
</tr>
</tbody>
</table>
1) LIME-LINES

Explain how to represent the following expressions using either “groups” or using an area picture:

- 4x6
- 17x8 + 17x3
- 48x500 - 6x500

Now ask students to represent each expression either using “groups” or using areas.

a) 13 x 6
b) 120 x 5 + 16 x 5
c) (3x2) x 7

d) 8 x (3 x N)
e) (4 x N) x 2
f) (3N) x (3N)

Now revisit these problems, but require that when groups are used, students state the expression as “... groups of N” or, when area is used, one of the sides of the rectangle is exactly N.
Generating equations

For each problem, students need to generate an equation that describes the problem and test the solution provided.

Problem 1: A rectangle has an area of 48. If one side has length 6, what is the length of the other side?

Problem 2: Candies are packed in bags of the same size. If 4 bags fit into a box and a total of 9 boxes have 720 candies, how many candies are in each bag?

Problem 3: A wall is composed of several rows of bricks. Each brick has an area of 40, and each row has 30 bricks. If the area of the wall is 24,000, how many rows are in the wall?

Problem 4: There are 1000 marbles in a box. All except 370 are white. The white marbles are sorted into 18 bags, each having the same number of marbles. How many marbles are in each bag?

Problem 5: If 7 rectangles of length 12 are put together, they form a shape of area 420. What is the height of each rectangle?

Problem 6: In a game, a player’s score is his number of blue chips plus 4 times his number of red chips. If a player’s score was 68 and he had 24 blue chips, how many red chips did he have?
Visiting a station:
If you are the only mentor in your table, stay in the table but keep a close eye on your students. Otherwise, select one mentor to travel with the students through the stations, while the rest of mentors stay in the original table. The following instructions apply to the mentor that will travel with the students:

Once you and your students arrive to a new station, remind them that they have 5 minutes to put 3 cards (identical copies of same cards they just put in the previous station). During the activity you can guide and ask questions, but do not need to correct if students make a mistake. You are a guide but your role right now is not to evaluate outcomes, but rather to encourage participation and multiple ways to justify the student choices.

If students find that a card “has” the same number of limes as another one, ask them to put both cards one below the other one:

If students finish before the 5 minutes, have them wait. Do not sent them to the next station, because some students may still be working there. Only move once 5 minutes have passed.

Returning to your station:

After your team has visited all stations, it returns to the original station. The lime-line should have now a total of 16 cards (unless some teams failed to put all, which is ok). Each card color indicates a different team. Ask students to check if the lime-line is correct, or if not, why and which cards to relocate. This should take 5 minutes as well.

If there is some time (or during the checking phase), ask students to find all values in the timeline, to verify that they appear in increasing order.
An example of three cards that correspond to the same value

Cards E9, E4 and E10 “have” (correspond to) the same number of limes, which is 384. The students will be able to figure this out by relating the different elements in the picture. For example:

**Relating E9 and E4:**

In E9, we have 12 branches and each has 32 limes. So there are 12 groups of 32 limes.
In E4, we have 6 branches and each has 32 pairs of limes.

So for example, if we consider E9 and we “join” pairs of branches we will have now 6 branches, each with 2 groups of 32 limes. But 2 groups of 32 limes is the same as 32 groups of 2 limes (this can be justified visually with a rectangular array for example). So we obtain 6 branches, each with 32 pairs of limes. We have arrived to the card E4!

Kids should write, for example: 12 times 32 = 6 times (2 times 32 ). Or using algebra: 2a times b = a times (2b).

**Relating E4 and E10:**

In E4, we have 6 branches and each has 32 pairs of limes.
In E10, we have two trees. One with 5 branches, each with 32 pairs of limes. The other tree has just one branch with 32 pairs of limes.

If we consider E10 and we join the branches as if they all belonged to a single tree, we would have 6 branches, all with 32 pairs of limes. this is exactly E4. So the cards are equal in terms of number of trees.

It is important that students explore the language of actions to relate the cards, and also that they can write (either arithmetically or algebraically) the numerical fact that they used as the essence in the reasoning.
Solutions:
The complete timeline has 16 cards, coded E1 to E16 (see lower right part of card): many cards correspond to the same number of limes. For example, cards E7 and E12 both correspond to 81 limes.

<table>
<thead>
<tr>
<th>Value (# of limes)</th>
<th>14</th>
<th>16</th>
<th>64</th>
<th>65</th>
<th>72</th>
<th>81</th>
<th>108</th>
<th>288</th>
<th>320</th>
<th>384</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card(s)</td>
<td>E6</td>
<td>E8</td>
<td>E15</td>
<td>E1</td>
<td>E7</td>
<td>E12</td>
<td>E14</td>
<td>E2</td>
<td>E16</td>
<td>E5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>E12</td>
<td></td>
<td></td>
<td>E16</td>
<td>E11</td>
<td>E13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>E9</td>
<td></td>
<td>E4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Visual Example of a correct timeline:
SQUIRRELS IN THE FOREST

Our Goals:
Become familiar and fluent with representing ratios and the words to describe ratios

Discuss in your group. Everyone talks.

How can we represent a ratio in different ways? (Percentages, Lines, bar models, equations). Give examples of a ratio and various representations.

If the ratio cats to dogs is 2:6 and we duplicate both the number of dogs and cats, what is the new ratio? What about the new ratio if we only duplicate the number of cats?

Let x, y, z be numbers. In the following bar model, what is the ratio between x and y? Explain why.
Materials

- 1 Red Envelope
- Pages 2-4 in the Student Workbook

Introduction

In this activity, present students with the following situation: some scientists have studied several forests in order to study the number of squirrels that live in it. They want you to give them a model that relates the number of trees with the number of squirrels, using ratios, proportionality and other tools. They tell you that making some approximations is ok. Can you help them?

Ask students to read page 3 in the Student Workbook and start working in some of the different problems that appear in the case. Ask students to work in pairs or groups of 3. You can lead some problems also with the whole group, and then ask them to work independently. Students should write the answers as written letters, and put them inside the red envelope (all letters go into a single one, for simplicity). Check for writing skills as well.

Note: problems in page 3 are (most of them) easier than those in page 4. Depending on your student’s current level, it is ok if they only complete page 3.

Choice

Give students choice to work on those problems they like. It is ok if they don’t complete all problems. However, monitor to help the students be aware of connections between the different problems that they solve, to activate reflection. You may also suggest, if you see students struggling in a problem, to consider another one first. There is not a single correct order to solve the problems, but there are certain paths that are more convenient and as a mentor you may try to guide students if they need help.
Scientists have studied several forests in certain country, in order study the number of squirrels that live in it, and use this data to help them in the future. They want you to give them a linear model that relates the number of trees with the number of squirrels, using ratios, proportionality and other tools. They tell you that making some approximations is ok. Can you help them? Answer the questions that they have emailed you.

Dylan asks: What relation can you see between the number of trees and the number of squirrels? Write me all that comes to mind.

Karl asks: Graph a line that represents the number of squirrels in terms of the number of trees. That way I will be able to make predictions for larger trees.

Paola asks: Find a ratio that approximately predicts the data in the table. It’s ok use roundings, we do that in science. Also, draw this ratio using a bar model, so that I can understand it better.

Juanita asks: in a forest with 80 trees, how many squirrels do you expect to find? I need to make that prediction.

Andrea asks: I counted 50 squirrels and 30 trees in a forest, but I may have counted wrong. Did I count correctly? Why or why not? Can you help me?
Elena asks: what would be a fast procedure to find (approximately) \( Y \), the number of squirrels, knowing \( X \), the number of trees? Before replying, can you please test your procedure?

Zhou asks: If we have at most 400 trees, what is approximately the maximum number of squirrels that we can find? This would really help in my research.

Kevin asks: I am looking into several forests, all of them have between 100 and 1000 trees. What can I conclude about the number of squirrels in these forests?

Mario asks: If we want to have forests with more than 600 squirrels, what should we do in terms of policies?

Marlon asks: Near my town there is a forest with 100 trees. Near my colleague's town there are two forests, each with 50 trees. Where do you think we can find more squirrels: near my town or near my colleague's? Or approximately the same? Can you send me a picture along with your explanation?

Diane asks: My son played a game: each time he saw a tree or a squirrel, he clapped. If the boy clapped a total of 182 times, which conclusions can you make? My boy can’t read, can you draw a picture for him?

Thor asks: Near my town there is a forest with 1000 trees. Near Ur’s town there are two forest, with a combined total of 1000 trees. Where do you think we can find more squirrels: near town C or near time D? Or approximately the same?
Solutions

We give some guidelines to how to answer the different problems. Remember that students should write short letters. Before, note that the ratio 2:5 is pretty useful to estimate the relations in the table.

**Dylan:** This is an open question and many levels of generality should be valid: if trees grow, squirrels grow, if there are no trees there are no squirrels, there is a proportionality relation, there are 2.5 as many squirrels as trees, etc. If students did not get too specific, don’t worry, later questions will help them to.

**Paola:** the ratio trees : squirrels is 2:5. We divide the bar into 7 equal pieces since 7 = 2+5:

<table>
<thead>
<tr>
<th>Number of trees</th>
<th>Number of squirrels</th>
<th># of Squirrels using the 2:5 ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>60</td>
<td>153</td>
<td>150</td>
</tr>
<tr>
<td>100</td>
<td>246</td>
<td>250</td>
</tr>
<tr>
<td>600</td>
<td>1491</td>
<td>1500</td>
</tr>
</tbody>
</table>

**Andrea:** She counted 30 trees and 50 squirrels. While there should be more squirrels than trees, this ratio is not ok. She should have for example, 30 : 75 or 20 : 50. So maybe she missed 25 squirrels, or she double counted 10 trees, or combinations of these. What matters here are two things: 1) students identify that Andrea’s ratio is not ok, 2) students see multiple causes for this, and tell this to Andrea. At least they should definitely recommend Andrea to look for more squirrels.
Solutions

**Karl:** Since the ratio $T:S$ is 2:5, then $S$ is equal to $2.5$ times $T$, so the line is one passing through the origin and with slope of 2.5 (or 5/2).

Make sure that students write a short explanation of the graph, and include the labels ($T$ and $S$). They can chose the scale they like and find more convenient, but ask them why.

**Diane:** The bar model can be used. Since the ratio $T:S$ is 2:5, we divide the bar into 7 pieces. Also, $182 / 7$ is:

$$182 / 7 = (140 + 42)/7 = 20 + 6 = 26.$$  
So each piece “weighs” 26 claps:

- Trees
- Squirrels

26  26  26  26  26  26  26  26

Diane asked what conclusions can be made. We can say, for example, that there are 52 trees in the forest and 182 minus 52, that is, 130 squirrels (or 26 x 5).

Marlon (similar for Thor): The answer is that in both places we find the same number of squirrels, because squirrels are proportional to the number of trees: the 100 tree forest will they have twice as squirrels as the 50 tree forest, but since the second place has 2 such forest, you actually get the same number of squirrels (because dividing into 2 and then duplicating are inverse operations). Students can justify this geometrically using the line or also using ratios, algebra or the bar model. Thor’s question is a bit more involved but similar ideas apply.
Student’s Workbook
(WHITE PAPER)
6 pages

128 Copies, 2-sided, stapled
Meeting 4 Fall 2017

Flora Adventure
October 25th

Contents

1) Time-Limes
2) Squirrels in the forest
SQUIRRELS IN THE FOREST

Our Goals:
Become familiar and fluent with representing ratios and the words to describe ratios

Discuss in your group. Everyone talks.

How can we represent a ratio in a different way? (Lines, bar models, equations). Give examples.

If the ratio cats to dogs is 2:6 and we duplicate both the number of dogs and cats, what is the new ratio? What about the new ratio if we only duplicate the number of cats?

Let $x$, $y$, $z$ be numbers. In the following bar model, what is the ratio between $x$ and $y$? Explain why.

\[
\begin{array}{cccccccc}
  & & & z & & & z & \hline
  & & & z & & & z & \\
  & & & z & & & z & \\
  & & y & & & & & x
\end{array}
\]
Scientists have studied several forests in a certain country, in order to study the number of squirrels that live in it, and use this data to help them in the future. They want you to give them a linear model that relates the number of trees with the number of squirrels, using ratios, proportionality and other tools. They tell you that making some approximations is ok. Can you help them? Answer the questions that they have emailed you.

**Dylan** asks: What relation can you see between the number of trees and the number of squirrels? Write me all that comes to mind.

**Paola** asks: Find a ratio that approximately predicts the data in the table. It’s ok to use roundings, we do that in science. Also, draw this ratio using a bar model, so that I can understand it better...

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**Andrea** asks: I counted 50 squirrels and 30 trees in a forest, but I may have counted wrong. Did I count correctly? Why or why not? Can you help me?

<table>
<thead>
<tr>
<th>Number of trees</th>
<th>Number of squirrels</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>98</td>
</tr>
<tr>
<td>60</td>
<td>153</td>
</tr>
<tr>
<td>100</td>
<td>246</td>
</tr>
<tr>
<td>600</td>
<td>1491</td>
</tr>
</tbody>
</table>

Table
Elena asks: what would be a fast procedure to find (approximately) \( Y \), the number of squirrels, knowing \( X \), the number of trees? Before replying, can you please test your procedure?

Zhou asks: If we have at most 400 trees, what is approximately the maximum number of squirrels that we can find? This would really help in my research.

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Marlon asks: Near my town there is a forest with 100 trees. Near my colleague’s town there are two forests, each with 50 trees. Where do you think we can find more squirrels: near my town or near my colleague’s? Or approximately the same? Can you send me a picture along with your explanation?

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Thor asks: Near my town there is a forest with 1000 trees. Near Ur’s town there are two forest, with a combined total of 1000 trees. Where do you think we can find more squirrels: near town C or near time D? Or approximately the same?
Manipulatives

You don’t have to print or cut these manipulatives. We will have these at the meeting.

- **Lime-lines**: Build 20 (one per table).
  - To build one: build a red paper arrow of about 6-7 feet long (the width can be 4-6 inches). Paste the card E2 Start (print in purple color) in the middle of the limeline. In the tip of the arrow, write “+ limes”.

- **p29-32 ACTIVITY 1 > Cards**: Form 100 kits of 3 cards each. Follow instructions as shown in the booklet, or see next page. There are 5 types of kits.
Each table gets a package (ziploc bag)
    Each package has 5 identical kits, of the same color.
    Each kit consists of 3 different cards, clipped with a clip.

<table>
<thead>
<tr>
<th>Table</th>
<th>Codes of the cards to form a kit (and then form 5 kits)</th>
<th>Paper color to print the cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1, A6, B1 or B6</td>
<td>E3, E8, E14</td>
<td>Yellow</td>
</tr>
<tr>
<td>A2, A7, B2 or B7</td>
<td>E1, E4, E16</td>
<td>Blue</td>
</tr>
<tr>
<td>A3, A8, B3 or B8</td>
<td>E6, E12, E13</td>
<td>Pink</td>
</tr>
<tr>
<td>A4, A9, B4 or B9</td>
<td>E5, E10, E15</td>
<td>Green</td>
</tr>
<tr>
<td>A5, A10, B5 or B10</td>
<td>E7, E9, E11</td>
<td>White</td>
</tr>
</tbody>
</table>

Example: package for table A8:

```
E6 clipped with clip  E12 clipped with clip  E9
E6 clipped with clip  E12 clipped with clip  E9
E6 clipped with clip  E12 clipped with clip  E9
E6 clipped with clip  E12 clipped with clip  E9
E6 clipped with clip  E12 clipped with clip  E9
```

All 5 kits inside a ziploc bag. Label the Ziploc bag with: “Table A9: Limeline cards”
MEETING 04 - MANIPULATIVES
ACTIVITY 1) LIIME-LINES

Cards
Cut them and assemble kits

One branch with 8 limes; another branch with 8 limes but 2 were lost.

One branch with 8 limes; another branch with 8 limes.

One tree with 8 branches and each branch has 8 limes.

One tree with 8 branches and each branch has 8 limes, except for the last one which has 9 limes.
MEETING 04 - MANIPULATIVES
ACTIVITY 1) LIME-LINES

One tree with 8 branches and each branch has 9 limes.

One tree with 8 weak branches each with 8 limes, and one strong branch with 8 limes.

One tree with 9 branches and each branch has 9 limes.

One tree with 9 branches and each branch has 12 limes.
One tree has 9 branches and each branch has 12 limes. Another tree has 9 branches and each branch has 20 limes.

One tree with 9 branches each with 32 limes.

2 trees, each has 5 branches, each branch has 32 limes.
2 trees, each has 5 branches, each branch has 32 limes.

One tree with 12 branches each with 32 limes.

One tree with 6 branches each with 32 pairs of limes.

One tree with 5 branches each with 32 pairs of limes. Another tree with one branch that has 32 pairs of limes.
Student Survey
(Pink paper)
128 copies

2-sided
PROBLEM 1
(Take at the end of Activity 1)

(A) Order the following 3 numbers from smallest to largest:
i) \(27 \times 8\), ii) \(28 \times 7\), iii) \(26 \times 5\)

Smallest: _______ Middle: _______ Largest: _______

Justify your choices. Write your work:

(B) Complete the blanks with either values, or the words “more” or “less”. Examples are shown.

Ex: \(5 \times 10\) is __8__ more than \(42\).

Ex: \(10\) is __2__ less than \(3 \times 4\)

1) \(45 \times 23\) is ______ more than \(45 \times 21\).

2) \(30 \times 14\) is _____ ________ than \(31 \times 13\).
First AND Last Name: ________________________   _______________________________      Table Number: _____  Lathrop ( )  Villa ( )

Questions:

1) How boring were today’s activities?
   1 = not at all boring 2  3 = somewhat boring 4  5 = very boring

2) How satisfied are you with how you on today’s tasks?
   1 = not satisfied at all 2  3 = somewhat satisfied 4  5 = very satisfied

3) How did you feel while solving today’s activities?
   1 = not nervous at all 2  3 = somewhat nervous 4  5 = very nervous

4) How much energy did you put into today’s activities?
   1 = no energy at all 2  3 = some energy 4  5 = lots of energy

5) How close do you feel to your mentor at Math CEO?
   1 = not close at all 2  3 = somewhat close 4  5 = very close

6) How close do you feel to your peers at Math CEO?
   1 = not close at all 2  3 = somewhat close 4  5 = very close

Feedback for your mentor: ________________ 3 words to describe Math CEO: __________________________

_________________________  _____________________________

2 THINGS WHICH I LEARNED TODAY

2 THINGS THAT I FOUND INTERESTING

I QUESTION THAT I STILL HAVE

Clean your table when you finish, return the dry-erase markers, pick up your trash and take your belongings. Thank your mentor!

Thanks for your responses!
Meetings Report
(Blue paper)
Dear leader mentor,

Please complete this survey about each of the students at your table. Circle the number that better reflects how you feel. We really value your input. THANK YOU for your thoughtful answers, and for your amazing contribution to Math CEO.

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<tr>
<th>STUDENT’S FIRST NAME: ___________________</th>
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<td>Compared to his/her peers, how good was this student at solving today’s math activities?</td>
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