**Literature Vocabulary**
habitat
oceans
colorful
blend
shore
tide pool
swamp
lake

**Math Vocabulary**
add
subtract
compare
 regroup
tens
ones
math movie
fact families
compatible numbers

**Materials**
- Unifix or Linking cubes (two 1-color trains per student)
- Fact Family Houses of sums of 10 from Fact Family Match game
- **BLM** Compatible Numbers on the Number Line – 3 per student

*Time Clue*
**BB** =  2 minutes
**CI** = 24 minutes
**AC** = 2 minutes

**ELPS** (*English Language Proficiency Standards*)
2A,2B,2F,2I,3A,3E,3H

**CCRS** *(College and Career Readiness Standards)*
ELA
II.B.1; III.B.1,2,3; IV.A.2,3; IV.B.1,2,3
MATH
I.A.1; I.B.1; VIII.B.1,2; IX.A.1; IX.B.1,2; IX.C.1,3; X.A.1,2
CROSS DISCIPLINARY
1.A.1,2; I.B.1,2,3,4; I.C.1,2,3; II.A2

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# Unit 2, Lesson 2                                          1st – 2nd

## TV Lesson                                                 ✏

*Read objectives while pointing to the words in the math lesson objectives. After each math objective, show children what that means.*

**Math Objectives:**
- Solve addition and subtraction problems.
- Recognize fact families.
- Understand what the equal sign means.
- Identify sums of ten as compatible numbers.
- Use a number line to represent sums and differences.

**Language Objectives:**
- Listen to the TV Teacher.
- Speak: Explain fact families and how they can help you learn basic facts.
- Speak: Explain how compatible numbers help you add and subtract.
- Read TV Teacher's notes on the TV and the record sheet.
- Write the compatible number combinations on the number lines.

**Building Background, Math**

**TEACHER:**  We have two new objectives to tackle today.  We are going to take a closer look at our fact family houses for 10, and we're going to use number lines. Boys and girls, can you tell your teacher what a **number line** is? (*pause, then to Azulito*)

**AZULITO**: Well, it sounds like a line with numbers on it.

**TEACHER:**  That is exactly what a **number line** is, Azulito, and we can use a number line to represent addition and subtraction just like we used the cubes.

We're also going to look again at the sums of 10 fact families. These are very special numbers we can call "friendly numbers." Mathematically we call them **compatible numbers**. There's another one of our vocabulary words!  *(Show, say, students repeat.)*  It just means that the numbers add together to make 10. They are a sum of 10 fact family.

We're going to use our fact family sums of 10 houses, our cubes, and number lines to model these **compatible numbers**.

⌨**SMART BOARD**
Create the number lines, models, number sentences from fact family houses of 10.

**Unit 2, Lesson 2**

**TV Lesson** - continued

✎

**Comprehensible Input, Math**

**TEACHER**: Let's lay out all of our sums of 10 fact family houses. It doesn't matter what order they are in as long as you can quickly get the fact family we want to work with next. *(show yours)*

Be sure your two 10-cube trains are handy. *(show yours)*

Now, let's take a look at our **BLM** Compatible Numbers on the Number Line.

First of all, take a few minutes, boys and girls, to explore these number lines. They are all the same. What do you observe on the top number line? Classroom Teachers, please collect their thoughts on the board of chart paper. (*Give them a fair amount of time to explore, then you and Azulito talk about the following attributes, writing them on the board.*)

- Straight line with arrows at each end – what do you suppose the arrows at each end means? (*The line goes on in both directions – we're just showing the numbers in a small part of it.*)
- There are straight lines spaced pretty equally apart with numbers under them. These are the numbers on the number line. What numbers do we have? (*zero through 10*)
- So (*pointing from zero to 1*), from here to here is ONE space. We have marked off 10 spaces on this number line. (*Count each space, starting at zero and run your finger or some marker to the next number on top of the number line to show the distance between the two lines.*)
- There are four number lines for every compatible numbers fact family. Why do you suppose we would have four number lines for each? Tell your Classroom Teachers, boys and girls. (*pause)* We have four number lines because most of the fact families will have four number sentences and we want to represent all of them.
- You may have seen more attributes of the line. Good for you! You are very observant!

Let's use all of our strategies available to us now to represent compatible numbers. What are compatible numbers?

**AZULITO**: Sums of 10 fact families

**Process for this Activity**
- Choose the Sums of 10 Fact Family.
- Find the fact family house.
- Make the compatible number train from the cubes that represent this fact family.
- Represent the compatible numbers fact family on the number line.
- Write the number sentence above the number line to coincide with the jump lines the numbers represent.

**TV Lesson**  - continued

**TEACHER:** Let's start with the sums of 10 fact family 2, 8, 10. Please find that house, boys and girls, and lay it where you can see it *(do so as students find theirs)*. This fact family is a compatible number fact family.

Now use the cubes to make this sum of 10 fact family. How will you do that? Remember to use two colors. *(Pause, then show yours – two of one color, eight of the other.)*  This train is a **compatible number** train.

We have our compatible number fact family house, and we have our compatible number train.

Let's use the number line now.  There are many ways to use a number line.  This is one way to use it.

What do you suppose you'll need to write at the top of each set of four numbers lines *(the compatible numbers fact family)*?  Our first one is 2, 8, 10. *(Ask students to write on theirs while you write on yours.)*

We can add in any order we want to. I think I'll start with the smallest addend first, the two.  We have to start at zero. *(Put your pencil at zero and make a little dot.)* Now we're going to jump over just like one of our water habitat frogs, two spaces. *(Make the jump shallow, just passing the vertical lines. Count the space to one, but do NOT dip down with the pencil. Count the space to two and jump down on the intersection of two line. Place a dot and make that jump line an arrow that ends on two.)*

**AZULITO:** That represents our 2!

**TEACHER**: Now we want to add on to the two. What do we have to do? Tell your teacher where you will start and how far your habitat frog will need to jump now. *(pause)*

We'll start on the two and jump eight spaces. (*Use the same format of counting the spaces but skipping over the numbers to land on 10.*)

**TV Lesson** - continued

That is the first addition sentence of our **compatible number** fact family to be represented on the number line. Write the number sentence just above the jumping arrows (*do so, making sure the 2 is over the 2 line, the + is where the two jumping lines meet, the 8 is over the 8 jumping line and the =10 is over the ten.*)

**AZULITO:** And I see why the dot and the arrows on the jumping lines are important! When I look at your number line, I can see that the dot is where you started. The arrows on your jumping lines tell me which direction you went. I like this number line!

**TEACHER**: Then let's represent the second addition number sentence for this **compatible numbers** fact family. What is the second addition sentence? Tell your teacher, boys and girls, then we'll see if Azulito knows *(pause)*.

**AZULITO:** Let's see, our fact family is 2, 8, 10. We have already represented $2 + 8 = 10$, so we need $8 + 2 = 10$. Let's do it! (*Repeat the same process.*)

**TEACHER**: We have represented both of our addition compatible number sentences for 2, 8, 10. What about the subtraction. Where do you think we should start on the number line for our subtraction problems? Girls and boys, please tell your Classroom Teachers where we should begin. *(pause)*

We'll start on the 10! We'll just make our jump lines in reverse, so that old habitat frog will be jumping back to zero now. Let's represent $10 – 2 = 8$. *(Read 10 subtract 2 equals 8.)* (*Follow the same process in reverse. The habitat frog jumps from 10 back two spaces, landing on 8.*)



**TEACHER**: This time I'm going to write the number sentence a little different $8 = 10 – 2$. Is that OK? Boys and girls, tell your Classroom Teacher why that is OK.

**AZULITO:** It's OK because it doesn't matter which side of the equal sign the answer is on. I can say $10 – 2 = 8$ or I can say that $8 = 10\text{-}2$. It's the same thing!

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**Process for this Activity**

- Choose the Sums of 10 Fact Family.
- Find the fact family house.
- Make the compatible number train from the cubes that represent this fact family.
- Represent the compatible numbers fact family on the number line.
- Write the number sentence above the number line to coincide with the jump lines the numbers represent.

**Classroom Teachers**
Circulate the room to make sure that all students understand how to use the number line to add and subtract.

You will need to complete this assignment during the Follow-up Lesson, using the same format.
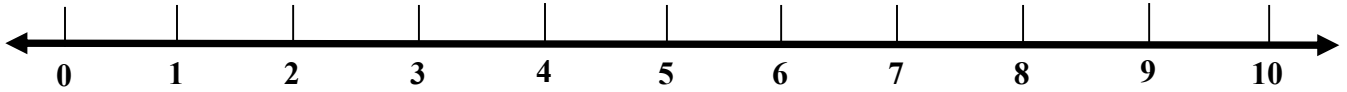
**TV Lesson**  - continued

**TEACHER**: Correct – Now, we have one last subtraction sentence with the compatible numbers fact family to represent on the number line. Boys and girls, tell your teacher what the number sentence is and how you will represent it on your number line. (*Give time, then represent 10 – 8 = 2 using the same process.*)

**TEACHER**:  Well done. Boys and girls, How have we represented our compatible number fact families today? What strategies have we used to model them? *(pause)*

**AZULITO:**  We use cube trains, fact family houses, the number line and number sentences.  We used four different strategies today!

(*If you have time to do another compatible number fact family, do so; otherwise Classroom Teachers will complete the assignment in the Follow-up Lesson. When you have done all you have time for, continue below. Be sure to end with Azulito explaining something.*)

**TEACHER:**  Good thinking, Azulito. You explained that very well. And now, I think you have a little task that you would like to explain to the boys and girls out there.  This one sounds a little fishy!

**AZULITO:** Well, I suppose it is fishy – remember those fish you measured in Lessons 1 and today? Well, I have some questions about what you found out about their measures *(explain task)*.

**TEACHER:** Thank you, Azulito! These are interesting questions.  I can't wait to see how all of you respond!

**Objectives:** And now before we go, let's review what we have learned today! *(do so)*

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**Process for this Activity**
- Choose the Sums of 10 Fact Family.
- Find the fact family house.
- Make the compatible number train from the cubes that represent this fact family.
- Represent the compatible numbers fact family on the number line.
- Write the number sentence above the number line to coincide with the jump lines the numbers represent.

**Azulito's Corner**
**Unit 2, Lesson 2**
How did your measurement lab compare to Lesson 1 measurement lab?  Did the length of the fish change? Did the number of inch worms it took to measure change from the number of big paperclips it took to measure the fish in lesson 1? Why do you think that is so?

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(Three per student)

**Compatible Numbers** (sums of 10 fact family)  _____,  _____,  _____

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<———|———|———|———|———|———|———|———|———|———|———>
    0   1   2   3   4   5   6   7   8   9   10
```

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<———|———|———|———|———|———|———|———|———|———|———>
    0   1   2   3   4   5   6   7   8   9   10
```

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<———|———|———|———|———|———|———|———|———|———|———>
    0   1   2   3   4   5   6   7   8   9   10
```

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<———|———|———|———|———|———|———|———|———|———|———>
    0   1   2   3   4   5   6   7   3   9   10
```

**Compatible Numbers** (sums of 10 fact family)  _____,  _____,  _____

```
<———|———|———|———|———|———|———|———|———|———|———>
    0   1   2   3   4   5   6   7   8   9   10
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<———|———|———|———|———|———|———|———|———|———|———>
    0   1   2   3   4   5   6   7   8   9   10
```

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<———|———|———|———|———|———|———|———|———|———|———>
    0   1   2   3   4   5   6   7   8   9   10
```

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<———|———|———|———|———|———|———|———|———|———|———>
    0   1   2   3   4   5   6   7   8   9   10
```