| **Lesson Title**: High Beginner ESL Lesson with Math Integration: Comparing Numbers Using Inequalities  **Created by: Kathleen DeMars** | | | **Level of Lesson:**  **ESL NRS 3 (High Beginning)**  **ESL NRS 4 (Low Intermediate)** |
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| **Content Area(s)** | **Targeted** [**IL ABE/ASE Content Standards**](http://www.excellenceinadulted.com/resources/abease-curriculum-project/)  **Targeted** [**Illinois ESL Content Standards**](https://drive.google.com/file/d/135yNemKLrQelnNSmpLdsIFJPXhILCPQi/view?usp=sharing) | | |
| **ELP Standard 2** | LI.2.3 - appropriately take turns in interactions with others. | | |
| **ELP Standard 3** | HB.3.1 - communicate information and feelings about familiar texts, topics, and experiences. | | |
| **ELP Standard 7** | HB.7.1 - show emerging awareness of differences between informal and formal language use  LI.7.3 - begin to use some frequently occurring general academic and content words. | | |
| **ELP Standard 8** | HB.8.1 - recognize the meaning of a few frequently occurring words, simple phrases, and formulaic expressions in spoken and written texts about familiar topics, experiences, or events.  LI.8.1 - determine the meaning of frequently occurring words, phrases, and expressions in spoken and written texts about familiar topics, experiences, or events. | | |
| **ELP Standard 9** | HB.9.1 - communicate basic information about an event or topic.  HB.9.2 - use a narrow range of vocabulary and syntactically simple sentences. | | |
| **1.NBT.3 (Math)** | Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of the comparisons with symbols >, =, and < | | |
| **CE5 (Civics)** | Compare credit and debit cards | | |
| **Integrated** [**Essential Employability Skills**](https://www.illinoisworknet.com/DownloadPrint/ILEssentialEmployabilitySkills-Handout.pdf) | | | |
| □ Personal Ethic *(Integrity, Respect, Perseverance, Positive Attitude)* | | **x** Teamwork *(Critical Thinking, Effective & Cooperative Work)* | |
| □ Work Ethic *(Dependability, Professionalism)* | | **x** Communication *(Active Listening, Clear Communication)* | |
| **Lesson Objectives *(Students will be able to)****:*   * Compare whole numbers between 1-99 using inequality symbols (>, =, <) * Ask yes/no questions of comparison * Compare prices of food items using oral and written language and visual inequality symbols. * Use everyday comparative language when speaking. | | | |
| **Engagement is not “one size fits all.” How are you providing multiple ways to engage all learners? Click on** [**Multiple Means of Engagement**](https://udlguidelines.cast.org/engagement) **to learn more about providing options for learners and explain how you are including this below:**   * Authenticity is optimized by relating content to an annual budget * Collaboration and community is fostered with large group and partner work * Expectations are clear and promote motivation | | | |
| **Key Vocabulary**:   * greater than * less than * equal to * comparison * more than * fewer than * the same as * cash back * Annual Percentage Rate | | | |
| **Instructional Materials:**  Textbooks or online curriculum:  Many high beginning ESL textbooks will have a unit that includes comparison. Examples from widely used textbooks include:   * Stand Out 2, Unit 2 (Let’s Go Shopping!), Lesson 2 (How Much Is It?) * Ventures 2, Unit 7 [Shopping], Lessons B and C   Websites: none | | | |
| **Lesson Activities:**  **Introduce the lesson using the google slides. After presenting the slides, the students will engage in application activity #1, which is included in the lesson plan document and application activity #2, which is supplemental.**  **Please see the Google Slides notes document. This document suggests talking points and important information to share with each slide. The same notes are available beneath each Google Slide in the presentation for your convenience.**  **Slide 1:** Today we will be talking about comparisons. We are going to use some math vocabulary to help us compare.  **Slide 2:** Let’s say the word together: comparison (repeat 3x)  What is a comparison? A comparison is an examination of two or more things to see if they are similar (the same) or different. We make comparisons all the time.  Look at the two pictures on the screen. What is the same in both pictures?  -possible answers: Children, girls, holding flowers.  What is different in the pictures?  -possible answers: The color of the girls dresses, the number of flowers they are holding  Let’s compare the flowers. Amari is holding one flower. Selena is holding many flowers. Selena is holding more flowers than Amari.  Repeat after me: Selena is holding more flowers than Amari.  Good! We just compared the two pictures.  **Slide 3:**  Let’s look at these two pictures.  What do you see in the pictures?  Possible answers: Both pictures have one man and one dog. Both pictures were taken outside.  Let’s compare the number of dogs in the pictures. How many dogs does Robin have? Answer: Robin has one dog. How many dogs does Justin have? Answer: Justin has one dog.  Let’s say a sentence to compare the number of dogs that Robin and Justin have.  Repeat after me: Robin has the same number of dogs as Justin.  **Slide 4:** With a Partner: one student will speak about what is similar and the other student will speak about what is different. The teacher will float around the room listening.  Let’s compare these adults and children!  What is the same about both pictures?  -possible answers: Both pictures have a grown up. Both pictures have a baby. Both pictures show an adult holding a child.  What is different about the pictures?  -possible answers: Daniela is holding two children. Marcus is holding one child. Daniela is inside. Marcus is outside. Daniela is a woman. Marcus is a man. Daniela’s baby is crying. Marcus’s baby is asleep.  How can we compare the number of children in the pictures?  Answers: Daniela has more children than Marcus. Marcus has fewer children than Daniela.  Notice that we can say the same thing two ways.  **Slide 5:** Before we move on to using a pie chart to compare budget line items, we will need to define a budget and a pie chart. These may be unfamiliar terms to High Beginning ESL students. Consider using images or drawings.  We budget our money so that we have enough to buy all of the things that we need.  A pie chart is a circle that is broken up into pieces. Each piece represents how much money we are spending on that line item.  **Slide 6:** Let’s examine this pie chart. What is it describing?  -possible answers: annual budget, how much they spend on different things, percent of their income spent on different things.  Are all of the sections the same size?  -no  Which section is the biggest?  -Food  Which section is the smallest?  -Savings  How can you tell?  -Food has a large piece and savings has a small piece.  -There are percentages next to each category. Food is 36.4% and Savings is 9.1%.  How many sections are there?  -5  -Are any of them the same size?  -yes, shelter, bills, and education are all the same size.  What does it mean if they’re the same size?  -it means that the family spent the same amount of money on shelter, bills, and education  **Slide 7:** Let’s look at the food section and the bills section.  Did the family spend more on food or bills this year?  -The family spent more on food.  Let’s use some math language to compare the amount of money spent on food and bills.  Repeat after me: The family’s food expense was greater than the family’s bills expense.  Greater than means more than another amount. We can show that we mean greater than by using this symbol: >  Food > Bills (write on board)  **Slide 8:** Here is an example of greater than using money. $52 is greater than $31.  Notice how the symbol looks like a V turned on its side. The mouth of the V opens to the bigger value.  I like to imagine pac man. Pac man always wants to eat the bigger snack (value).  **Slide 9:** Now, let’s compare savings and shelter.  What color is the savings section?  -light blue  What color is the shelter section?  -pink  How can we compare savings to shelter?  -The family’s savings expense was less than the family’s shelter expense.  Savings < Shelter (write on board)  Less than means fewer than another amount. We can show that we mean less than by using this math symbol: <  **Slide 10:** Here is an example of using the less than symbol to compare money. $46 is less than $120. Notice that the point of the V is toward the smaller amount. Pac man still wants to have his mouth open to the larger quantity.  **Slide 11:** What do you notice about the amount of money spent on bills and education?  -The amount of money spent on bills and education is the same (18.2% of income)  The family’s bills expense and education expense were equal. Equal to means that two amounts are the same. We can show that we mean equal to by using this symbol: =  **Slide 12:** Here is an example of using the equal to symbol instead of words.  $16 is equal to $16.  **Slide 13:** With a partner, take turns comparing each of the categories on the screen.  For example: Savings is less than bills.  The teacher should walk around the room to listen as students compare.  Bring the group together after they’re finished talking.  **Slide 14:** Review the four comparisons together. Ask students to repeat after you for each one.  **Slide 15:** For this short exercise, students should use a piece of paper to compare the categories using inequality symbols <, >, and =. The teacher should give the students a few minutes and then ask them to share what they did on a voluntary basis.  **Slide 16:** After students have shared, they can look at this slide to compare their answers. Correct any misunderstandings about the meaning of each inequality symbol with direct instruction.  **Slide 17:** We have made comparisons about a budget. Now, we will make comparisons about credit cards.  **Slide 18:** Next, we are going to compare credit card offers. First, we need to understand what a credit card is. A credit card is a small plastic card that allows us to make purchases. They are issued by banks and financial companies and have a line of credit. The line of credit determines how much the cardholder can spend. The amount is called the credit limit.  **Slide 19:** When we read advertisements for credit cards, we often see these two terms: cash back and APR.  Cash back is an incentive that credit card companies sometimes offer. When you make a purchase at the store, the credit card company gives you a small percentage of that purchase back.  APR stands for Annual Percentage Rate of charge. This is the amount of interest that the credit card company charges the cardholder on any balance that they carry one month after purchase. It is important to pay off your credit card each month so that you don’t have to pay interest on your purchases. This is how credit card companies make money.  **Slide 20:** Here is a chart that compares three credit card offers. Do you notice the vocabulary that we just discussed?  We can see cash back on each offer as well as the APR for each card offer.  **Slide 21:** We can use this chart to make comparisons between the card offers. This will help us decide which card is the right choice for our needs. Let’s compare the annual fee of card B to the annual fee of Card C.  Give students a chance to speak. Teacher may prompt the students with the beginning of the sentence. Point out the use of symbol as well as the language.  Answer: Card B’s annual fee is **less than** Card C’s annual fee. $35 is less than $60.  **Slide 22:** Now, let’s compare the APR rate of Card A to the APR rate of Card B after the introductory promotion rate expires. The introductory rate is in the blue half circle at the top. The permanent APR rate is in the white rectangle. Ask students to locate the permanent APR rate on the chart for Card A and Card B.  Ask: What is the permanent APR rate for Card A?  Answer: 27%  Ask: What is the permanent APR rate for Card B?  Answer: 18%  Now let’s compare those rates: The permanent APR rate for Card A is \_\_\_\_\_\_\_\_\_\_\_ the permanent APR rate for Card B.  The teacher may write this on the board or speak it aloud. Allow students to make the comparison using greater than, less than, or equal to.  Answer: The permanent APR rate for Card A is greater than the permanent APR rate for Card B. 27% is greater than 18%.  **Slide 23:** We can use this chart to make comparisons between the card offers. This will help us decide which card is the right choice for our needs. Let’s compare the cash back percentage of card A to the cash back percentage of Card C.  Give students a chance to speak. Teacher may prompt the students with the beginning of the sentence. Point out the use of symbol as well as the language.  Answer: Card A’s cash back percentage is **less than** Card C’s cash back percentage. 3% < 5%.  **Slide 24:** Now that the students have had the opportunity to practice comparing components of the credit card chart, it is time to decide which card they would select. There is not a right or wrong choice. The purpose is for the student to make a choice and use comparative language to justify their selection.  **Slide 25:** Sometimes we use math language in our everyday life but say things in a slightly different way.  When talking about inequalities we would typically say, “more than, fewer than, or the same as” to refer to discrepancies in amounts.  Let’s say these phrases together. Repeat after me:  “Jose has more shorts than pants in his closet.”  “Laura has been to the zoo fewer times than Sarah.”  “Marco is in the same class as Eric.”  **Slide 26:** Speaking practice:  Students will look at the two pictures and make up a sentence that uses more than, fewer than, or the same as to describe what they see.  Example:  Picture 1 has the same amount of keys as Picture 2.  **Slide 27:** Speaking practice:  Students will look at the two pictures and make up a sentence that uses more than, fewer than, or the same as to describe what they see.  Examples:  Picture 1 has fewer peppers than Picture 2.  Picture 2 has more in it than Picture 1.  **Slide 28:** Speaking practice:  Students will look at the two pictures and make up a sentence that uses more than, fewer than, or the same as to describe what they see.  Examples:  Picture 1 has fewer cats than Picture 2.  Picture 2 has more cats than Picture 1.  **Slide 29:** Let’s review the important vocabulary!  Compare means to examine and notice what is the same and what is different. It can also mean noticing which is greater than, less than, or equal to.  Greater than means more than another amount.  Less than means less than another amount.  Equal to means the same as another amount.  More than is similar to greater than  Fewer than is similar to less than  The same as is similar to equal to  **Slide 30:** These are the directions to the speaking activity that should be shown while students practice the activity in groups of 4-5 students. It will be helpful for students to see the activity modeled before they begin to play the game on their own in their small groups. | | | |
| **Learners vary in the way that they react to and grasp information that is presented to them. Click on** [**Multiple Means of Representation**](https://udlguidelines.cast.org/representation) **to explore ways that you can provide options for representing content and explain how you are including this below:**   * Students have alternatives for auditory and visual information. Material will be presented both visually and auditorily. * Decoding of text and mathematical symbols is present in the structure of the lesson plan * Vocabulary and symbols are clarified in the presentation and activities | | | |
| **Performance Tasks:**  **Activity #1:** Speaking (HB.S3 & 1.NBT.3)  Students will break into groups of 4-5 students. One student will think of a number from 1-99. Once the student has decided on their secret number, members of the group will take turns asking greater than or less than quantity questions to try and figure out what the secret number is. Each student will get 2 turns and then they’ll have to guess as a group what the secret number is. Then, the next member selects a secret number and the other members each get 2 turns to ask greater than and less than questions before they decide as a group what number they think it could be. Play continues until everyone has had a turn to think of a secret number.  **Example:**  Member 1 selects secret number (42). Then they answer the yes/no questions.  Member 2: Is it greater than 50?  -no.  Member 3: Is it less than 20?  -no.  Member 4: Is it greater than 30?  -yes.  Member 5: Is it less than 40?  -no.  Member 2: Is it greater than 45?  -no  Member 3: Is it greater than 41?  -yes  Member 4: Is it less than 44?  -yes  Group discusses and guesses: Is it equal to 42?  -YES!  **Activity #2:** Reading (HB.R1 & 1.NBT.3)  Students will carefully examine a lunch menu from Mathew’s. Then, they will answer questions comparing the two-digit prices using written inequality language and symbols (>, <, and =). | | | |
| **Learners best express what they know in different ways. Click on** [**Multiple Means of Action & Expression**](https://udlguidelines.cast.org/action-expression) **to explore ways to offer options for learners and explain how you are doing this below:**   * Students have varied methods of response (verbal and written) * Students have graduated levels of support. They move from using the vocabulary verbally to writing it in words to using symbols to represent the language. | | | |
| **Notes:**  **Standards for Mathematical Practice:**  **-SMP #2:** Reason abstractly and quantitatively.  **-SMP #3:** Construct viable arguments and critique the reasoning of others. | | | |