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| **Grade 4** | | |
| **Grade: 4 Subject: Math**  **Unit: Patterns: Sorting numbers Venn Diagrams** | | |
| **Learning Target:** Students will use Venn diagrams to express mathematical relationships. | | |
| **Curriculum Outcomes**:  **PR 04** – Students will be expected to identify and explain mathematical relationships, using charts and diagrams to solve problems.  **PR04.04** Identify a sorting rule for a given Venn diagram.  **PR04.05**Describe the relationship shown in a given Venn diagram when the circles overlap, when one circle is contained in the other, and when the circles are separate.  **PR04.06** Determine where new elements belong in a given Venn diagram.  **PR04.07** Solve a given problem by using a chart or diagram to identify mathematical relationships. | | |
| **Screencast –** [What is a Venn Diagram or Set Diagram](https://www.youtube.com/watch?v=mLIuHU5Sj5w) <https://www.youtube.com/watch?v=mLIuHU5Sj5w> | | |
| **Resources/AT Tips:**  iPads  Pattern shapes app and corresponding Math learning Center site on PC    Teaching Graphs app – Venn diagrams    Math Makes Sense 4 – Text book | | |
| **Lesson Procedure** | | **21st Century Skills** |
| **I do:**   * Activate prior knowledge by creating a pattern on the Smartboard. Ask students to describe, recreate and extend on their iPads using the corresponding app. * What things do we sort in our rooms? How do we sort them? These comparison relationships also apply to numbers. * Ask who has used a Venn Diagram? What do they look like and why do we use them? * Show and explain three types of Venn Diagrams * Watch screencast of [Venn diagrams](https://www.youtube.com/watch?v=mLIuHU5Sj5w) <https://www.youtube.com/watch?v=mLIuHU5Sj5w> | | find, validate  remember, understand  collaborate, communicate  analyze, synthesize  critical thinking  evaluate, leverage  create, publish  citizenship |
| **We do:**   * Display teaching graphs app on the Smartboard. Read Venn diagrams together and answer questions as a class. Students may follow along on their iPads answering as we do. * Look at making Venn diagrams together. Explain how to change the values. Make sure to mention that the box is need around the Venn to represent the entire group that is being sorted. This will show the items that do not fit the attributes of the circle(s) outside of them, but within the rectangle. * Working with another student use the app to create a Venn Choose two attributes to sort the following numbers 224, 3689, 2313, 1722, 467, 94, 371, 176, 2388, 4585 (list these on the board) – these will be shared during We Share at the end. | | Notes |
| **You do:**   * Math Makes Sense 4 Page 44 – questions 1-4. As students are working take time to circulate checking for comprehension and application. * When done complete min assessment at the bottom to be passed in using Showbie – this will be corrected with feedback for the student. | |  |
| **We share:** At the end of class have groups share via air server of dongle how they chose to sort the numbers from We do. | |  |
| **Differentiation** | | |
| **Adaptations:**  Take students back to sorting pattern blocks if necessary. Using Venn diagram mats and sorting them.  Have students watch screencast of [Venn Diagrams](https://www.youtube.com/watch?v=mLIuHU5Sj5w) <https://www.youtube.com/watch?v=mLIuHU5Sj5wagain> | **Enrichment:**  Have students to use Venn Diagrams to solve the following problem  In a class of 22 students, 10 play hockey and 15 play basketball.  Is it possible that there are some how play neither sport? Explain your thinking using a Venn.  What is the greatest possible number of students who do not play either sport? Explain your thinking using a Venn.  Is it possible that all 22 students in the class are involved in one sport or the other or both? Explain your thinking using the Venn. (see below) | |
| **Assessment:**  Mini Assessment below – Give students one set of data and apply it to three different types of Venn diagrams (see below) | | |
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Jennifer listed the numbers for her raffle tickets in the Spring Fair: 723, 694, 496, 501, 360, 999, and 222. Sort these numbers using the **three types** of Venn Diagrams shown

M4 PR04 01 circlesA p59.eps

M4 PR04 01 circlesB p59.eps

### M4 PR04 01 circlesC p59.eps

**Enrichment**

You may use the app or paper to complete

In a class of 22 students, 10 play hockey and 15 play basketball.

Is it possible that there are some how play neither sport? Explain your thinking using a Venn.

What is the greatest possible number of students who do not play either sport? Explain your thinking using a Venn.

Is it possible that all 22 students in the class are involved in one sport or the other or both? Explain your thinking using the Venn.