Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.OA.1

Madeline has three times as many fish as Mallory. If Madeline has 18 fish, how many fish does Mallory have? Use pictures and/or words to explain your answer.

Mallory has \_\_\_\_\_\_\_ fish

Karen has 5 times as many fish as Kelly. Fill in the chart to show three different amounts of fish that Karen and Kelly might have.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **possibility 1** | |  | **possibility 2** | |  | **possibility 3** | |
| Karen | Kelly |  | Karen | Kelly |  | Karen | Kelly |
| \_\_\_\_ fish | \_\_\_\_ fish |  | \_\_\_\_ fish | \_\_\_\_ fish |  | \_\_\_\_ fish | \_\_\_\_ fish |

|  |  |  |  |
| --- | --- | --- | --- |
| Teacher notes:    • Students may do calculations on the paper, either to solve or to check their work. You may also choose to give students extra paper on which they can do their work.  • The target concept of this task is described in 4.OA.1: *Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.*  • For the first part of this task, students need to identify that Mallory has 6 fish. Common error for this task would be for students to indicate that Mallory has “15”, “21”, or “54” fish. If students write 15 or 21, then that will show that they are having trouble distinguishing betweeen additive and mutliplicative comparison and need more practice with those types of situations. However, if they write “54”, while also incorrect, this will show some level of understanding that the situation in the task is multiplicative, since 18 x 3 = 54. Even though 54 is both incorrect and unreasonable in terms of size, it does show more understanding of the target concept than 15 or 21 would show.  • For the second part of the task, the students should write pairs of numbers so that Karen’s number is 5 times the size of Kelly’s number. Look to see if the students write pairs of numbers that show an additive realtionship (ex: 5 & 10, 12 & 17, etc.), that will indicate that they are having trouble distinguishing betweeen additive and mutliplicative comparison and need more practice with those types of situations. If they write pairs of numbers that do show a multiplicative relationship but are reversed (giving Kelly the higher number), that would be incorrect but would show an understanding of multiplicative vs. additive number relationships.  • In scoring this task, you may choose to use the level of student work to distinguish between a 3 and a 2 or a 2 and a 1. If so, it is important to make it clear to the students in advance that the task will be scored not only for the correct answer, but also for the work that they show. | | | |
| **Not yet:** Student shows evidence of misunderstanding, incorrect concept or procedure. | | **Got It:** Student essentially understands the target concept. | |
| **0 Unsatisfactory:**  **Little Accomplishment**  The task is attempted and some mathematical effort is made. There may be fragments of accomplishment but little or no success. Further teaching is required. | **1 Marginal:**  **Partial Accomplishment**  Part of the task is accomplished, but there is lack of evidence of understanding or evidence of not understanding. Further teaching is required. | **2 Proficient:**  **Substantial Accomplishment**  Student could work to full accomplishment with minimal feedback from teacher. Errors are minor. Teacher is confident that understanding is adequate to accomplish the objective with minimal assistance. | **3 Excellent:**  **Full Accomplishment**  Strategy and execution meet the content, process, and qualitative demands of the task or concept. Student can communicate ideas. May have minor errors that do not impact the mathematics. |
| Adapted from Van de Walle, J. (2004) Elementary and Middle School Mathematics: Teaching Developmentally. Boston: Pearson Education, 65 | | | |