

| Use Physical and Visual Tools |                                |  |
|-------------------------------|--------------------------------|--|
| UNDERSTAND                    | Definition                     | In mathematics we can sometimes use specific tools that will help us be more efficient or help us find a precise solution.   |
|                               |                                | *Note: This guide is to be used when introducing students to a math tool that is not specifically<br>identified on the PATH Menu. Examples may include, but are not limited to, calculators, rulers,<br>protractors, paper/pencil, and graduated cylinders.  |
|                               | When to Teach<br>This Strategy | <ul> <li>If you see students who</li> <li>struggle to understand a problem and might benefit from the use of visual/physical tools</li> <li>are first learning a concept</li> <li>are solving a complex problem that requires a specific visual or physical aid</li> </ul>   |
| PREPARE                       | Why We Teach It                | In mathematics it is sometimes necessary to use a specific tool to find a precise solution. (For example, in measurement we need a ruler or a protractor.) In other instances, a specific math tool will help us be more efficient in finding our solution or may give us a way to check our work (for example, a calculator). |
|                               | Secrets to<br>Success          | <ul> <li>For students to be successful with this strategy they must be able to</li> <li>understand the purpose of the tool and</li> <li>understand how to use it correctly and efficiently.</li> </ul>   |
| TEACH                         | How We Teach It                | Modeling a think-aloud during the "I Do" focus lesson:   |
|                               |                                | Explain to students that they are going to learn how to use a specific math tool that will help them make sense of a problem and find a solution in an effective way.  |
|                               |                                | [Insert name of math tool here] will provide you an opportunity to make sense of a problem and/or to check your work. Additionally, this tool will help you to efficiently find a solution to a problem.   |
|                               |                                | Using this tool helps you understand what is happening in the problem, and in some instances you will need a tool (such as a ruler or protractor) to find a precise solution to a problem.   |
|                               |                                | When we read a math problem, we can think about what tool might best help us to represent the problem, and then use that tool to help us find a solution.  |
|                               |                                | (At this point, you would model how to use the specific math tool being introduced.)   |
|                               |                                | <ul> <li>Suggested Language</li> <li>What tool can I use that will help me solve the problem efficiently?</li> <li>Have I checked to make sure my work is done correctly? Is there a tool that will help me do this?</li> </ul>  |
| SUPPORT                       | Instructional<br>Pivots        | <ul> <li>Students must be taught how to use the math tool correctly (not as a toy) and have the opportunity to practice using it.</li> <li>A math tool is not useful if it is not used correctly or if students do not understand its use! Model, model, model.</li> </ul>   |
|                               | Partner<br>Strategies          | <ul> <li>These strategies may provide support before, during, and after teaching this strategy:</li> <li>Check My Work</li> <li>Check My Work Using a Different Method</li> </ul>  |