SMART Pad

The SMART Pad (also called a SMART Slate) is the size of a tablet, but has the same functions as the full-sized board. This wireless device gives teachers the ability to teach lessons from anywhere in the classroom. Also, the teachers are able to hand the SMART Pad to a student in class to have them participate and engage themselves in the lesson. This device not only relieves the pressure of presenting in front of the class but also adds some excitement to the classroom.

This technology can be easily accessible. If the school already has SMART boards then all that needs to be purchased is the SMART pad. This device is usually priced under 100 dollars and can be found on Amazon or eBay. If the school does not have SMART boards then there are still other options that are very similar. There is the eInstruction InterWrite Pad that works with Mac and Windows. For more information on this visit this website: <http://www.examiner.com/article/top-ten-education-technology-christmas-ideas-3-einstruction-interwrite-pad>. With devices like these, it will be easier for the students to participate and easier to visualize the problem. For example, when asking the student to find the domain and range of a function when given a graph or table. The graph and table provided by the SMART technology is more appealing to look at than if it were drawn. Not only is the appearance better but also there is time being saved. The students will be able to create the graph and plot the points neatly. With the grid being there, there will be less confusion on what values are where.

Another application for the SMART Pad is in teaching modeling with geometry. When students need to measure geometric shapes, and understand that combining different shapes will create an entirely new structure (for example, combining a pentagon and triangles to make a star). This can be shown in real time via the SMART Pad and displayed in the board for the entire class. So rather than trying to draw the shapes up on the board with a standard whiteboard and marker, and have the measures not match up and waste time trying to get the correct figures, more time can be spent learning the material at hand. Below is an attached example worksheet that could be used with this technology for this lesson. The lesson is forming tangrams, using basic geometric shapes to produce other figures. The students are only given the outline of the shapes, and are supposed to figure out what other shapes to use to make the figure. The figures would be displayed on the board and using the SMART Pad the students would take turns placing the geometric shapes in the figure.

**Using Responses from the SMART Pad to Guide Student Learning**

The formative assessment process will include both teacher and student input to use learning understanding of the task, and help students update their thinking. The SMART Pad allows the students to be engaged both mentally and physically while letting the teacher see their level of understanding the thinking process that may otherwise be missed. By using the SAMRT Pad, students can use a pre-made or online tables and graphs so they are able to make more precise charts and sketches. By having this available to them, the students who are struggling to understand the material can now more easily manipulate the graphs and charts so they can see how the functions relate to the look of the graphs. The SMART Pad also allows students to more readily practice trial and error solutions, which they avoid when using pencil and paper because they do not want to erase or cross out incorrect answers on their worksheets. Students can also graph various functions that they come up with to familiarize themselves with the technology and gain an understanding of the algebraic concepts as well as how to graph and model their ideas.

There are two areas of the Common Core State Standard for Mathematics that this technology can help enhance:

**CCSS.Math.Content.HSF.IF.A.1** Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If *f* is a function and *x* is an element of its domain, then *f*(*x*) denotes the output of *f* corresponding to the input *x*. The graph of *f* is the graph of the equation *y* = *f*(*x*).

[**CCSS.MATH.CONTENT.HSG.MG.A.1**](http://www.corestandards.org/Math/Content/HSG/MG/A/1/)Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).

The following math activity demonstrates how the SMART Pad can be used to provide feedback to students in a modeling activity. By using this technology, struggling students will be able to connect verbal instruction with the hands-on learning of the SMART Pad. To meet this standard students must be able to use basic geometric shapes (squares, triangles, rhombuses, pentagons) to create new figures. This technology can help struggling students by allowing them to change and manipulate the models without having to draw each new model in their notebooks. This assists in getting students more engaged in the lesson, and makes it easier to change any “mistakes” they may make. For the students who are struggling, this will give them more practice to work with their group and individually without being embarrassed. This will help that struggling student not be afraid to take that next step in getting involved which leads to that student meeting the learning objective.(In the next lesson the students will need to be able to find the area of the figures they crated using the formulas for the geometric shapes they learned in the previous lesson).

**Math Activity:**

The teacher will display geometric shapes on the SMART board and label each geometric shape with a number. Each student is given a worksheet and asked to find the basic geometric shapes used to create the new figures. Each group of students will be assigned a different figure, by the number assigned to each group, to try and solve. Once they have decided on an answer, they will present their findings to the class using the SMART Pad. For example, if a group is assigned a star, and the group decides a star is made up of a square and five triangles. So the group gets the SMART Pad and tries to place those six items in the given outline, but find there are spaces where the geometric shapes overlap. They will then go back and discuss first as a group why it didn’t work as expected, and then as a class. The group will then be given a second chance to show that the needed shapes were a pentagon and five triangles. If the original group is unable to find the correct shapes, it will be open to a class discussion. Students will be instructed to try on paper before using the SMART Pad to show their figures since we are wanting an understanding of modeling and determining what works and what doesn’t work.

**Reason for Using the SMART Pad:**

Students will want to use the SMART Pad because it’s a fun new piece of technology that they are not used to. So letting the students play around with it’s functions and figure out what it can really do will make them even more engaged and intrigued in not only this lesson but in the future as well. For this activity, the SMART Pad takes the place of the traditional whiteboard and makers and having students up at the board trying to draw their figures and shapes which can be very difficult and often frustrating. The SMART Pad also adds instant feedback that the traditional whiteboard may not have given due to the inaccuracy of drawings and how easy erasing slight mistakes are. The teacher’s role is to guide students in discussion of when right and what changes could be made and understand how using the models of the SMART Pad assisted is showing mistakes that could have been otherwise missed.

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