Desmos Activity Builder

# CREATE YOUR OWN INTERACTIVE ACTIVITY

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In the ever growing, ever changing field of educational technology, the effectiveness of a tool is often measured in terms of the new features being added over a period of time and their effectiveness in improving teaching in classrooms.

Desmos (www.desmos.com), an online graphing calculator, is one such tool; it has made great progress over the past few years and is no longer just a graphing calculator. In the July 2014 issue I had discussed the features of Desmos as an online graphing calculator and had also shared my experience of using it in the classroom as a teaching tool, in the article titled *Graphing with Desmos*. Later in the March 2016 issue I had discussed the features of Desmos Classroom Activities in the article *Play and learn with Desmos*. Desmos has evolved a great deal since then. In this article I will highlight the features of the Desmos Activity Builder - which allows the user to create a customized Classroom Activity - and then take you through the process of creating one such activity. To get started (Figure 1), login to www.teacher.desmos.com (prior registration is required; registration is free and no software needs to be downloaded to your own computer); select Custom and then New Activity.

*Keywords: Technology, pedagogy, graphing calculator*

Figure 1
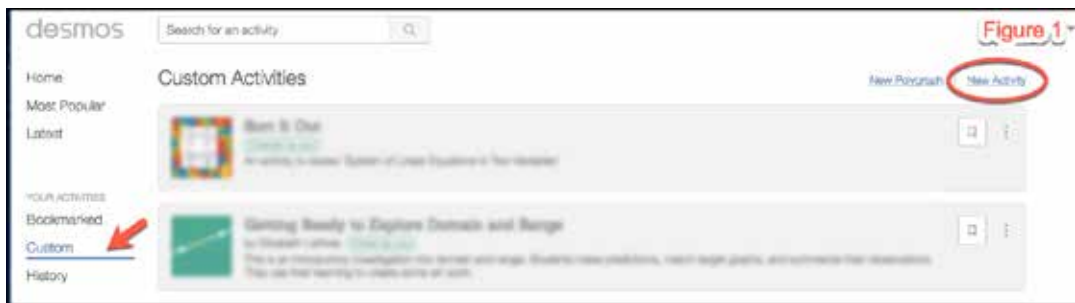
Each activity consists of multiple screens, which the students will progress through as directed. These screens can be made using 'Graph', 'Sketch', 'Media', 'Note', 'Input', 'Choice' or 'Labs'. One needs to activate 'Card Sort' and 'Marbleslides' under the option 'Labs' in order to use these special features (Figure 2).
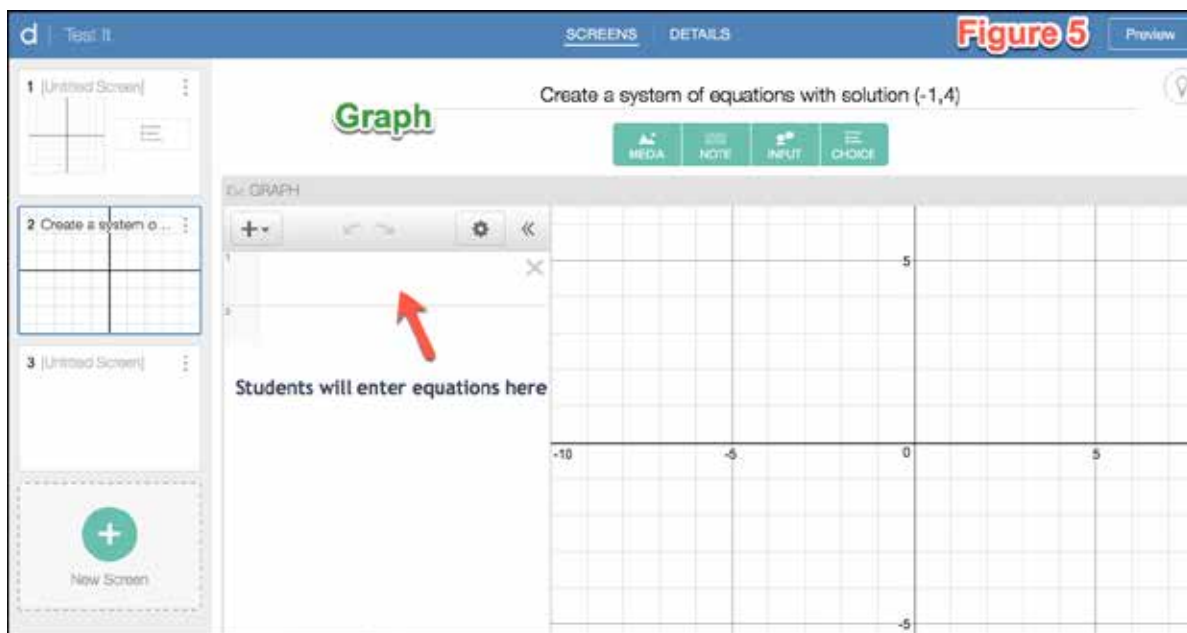

Figure 2
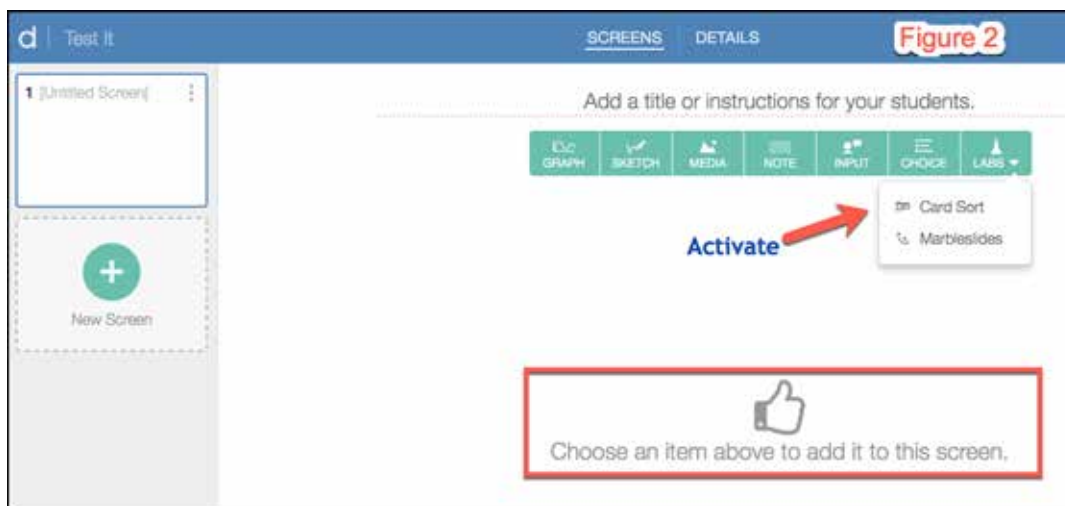
The first screen may be used in multiple ways such as giving instructions to the students, as a warm up exercise using Graph or inserting a video or an image under Media. One can use the option of 'Note' to write the instructions for students and explain what they will be learning through this activity (Figure 3).
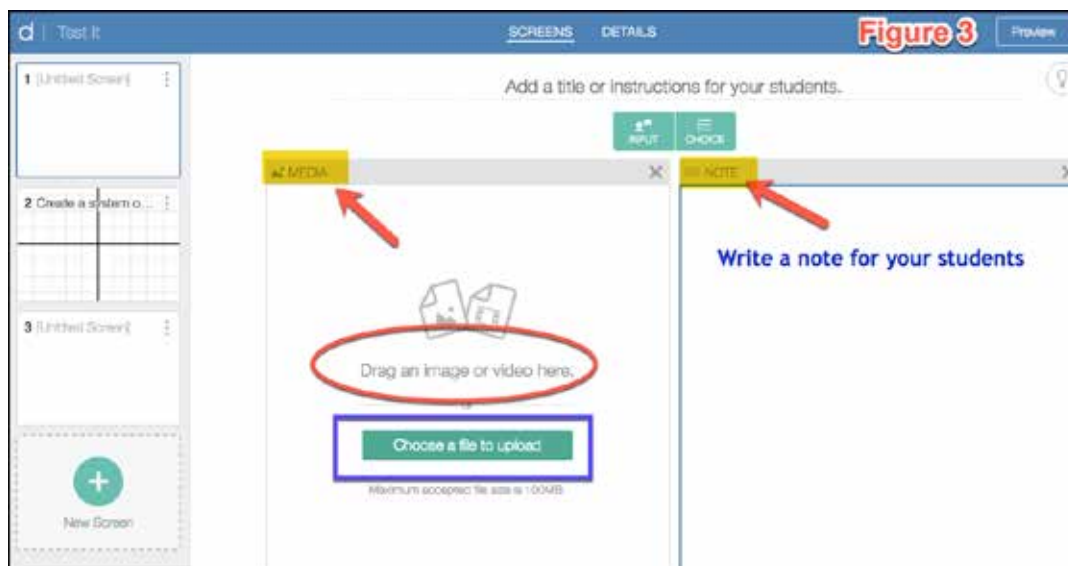

Figure 3

This (Figure 4) is what the screen will look like to a student, when 'Media' and 'Note' option is used to create the first screen.
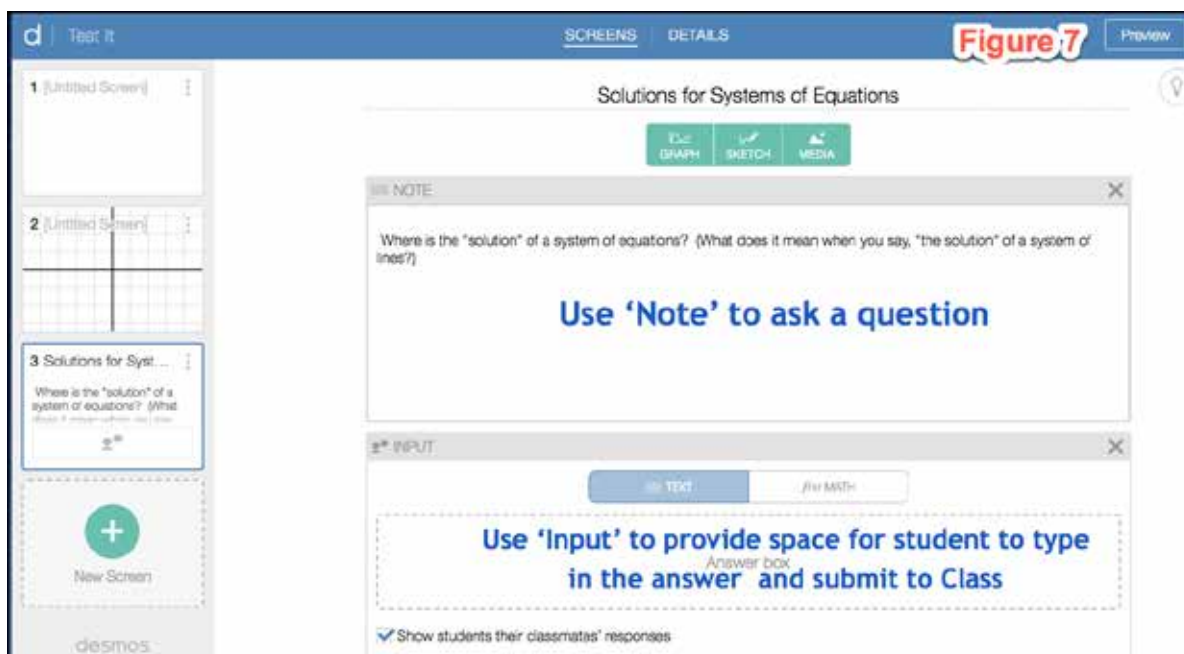

Figure 4
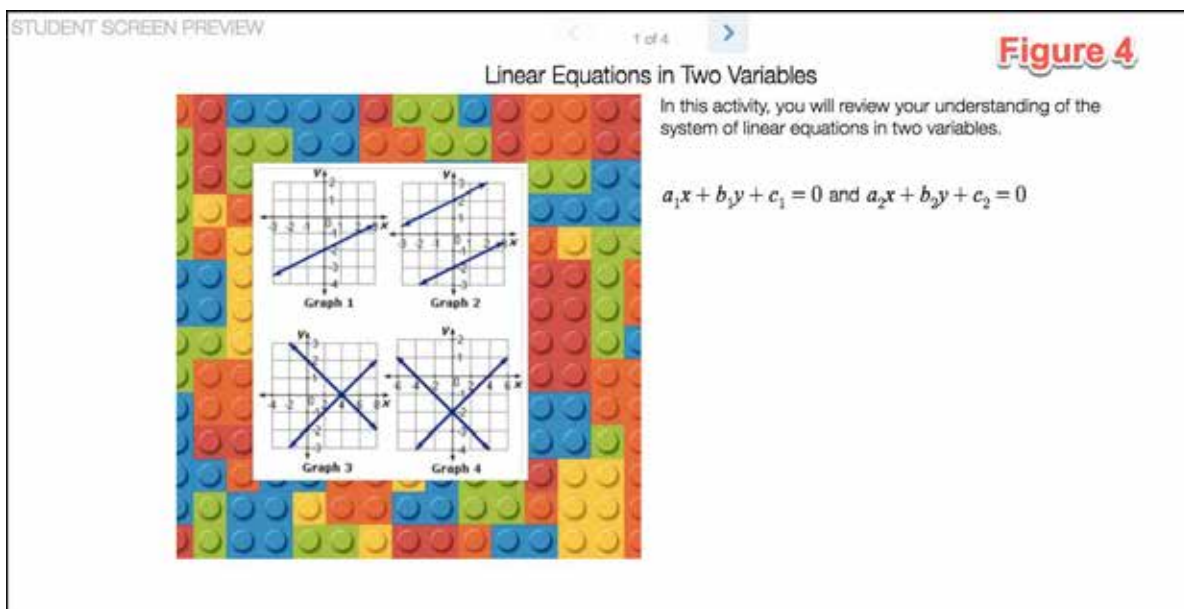
Click on the 'Add' sign to get a new screen. The next screen will require students to type in multiple equations with the requirement that (-1,4) is the solution of the system so generated. Selecting the 'Graph' option to get the 'Desmos' graph inserted in the screen allows students to type in the equations and see the graph plotted alongside (Figure 5).
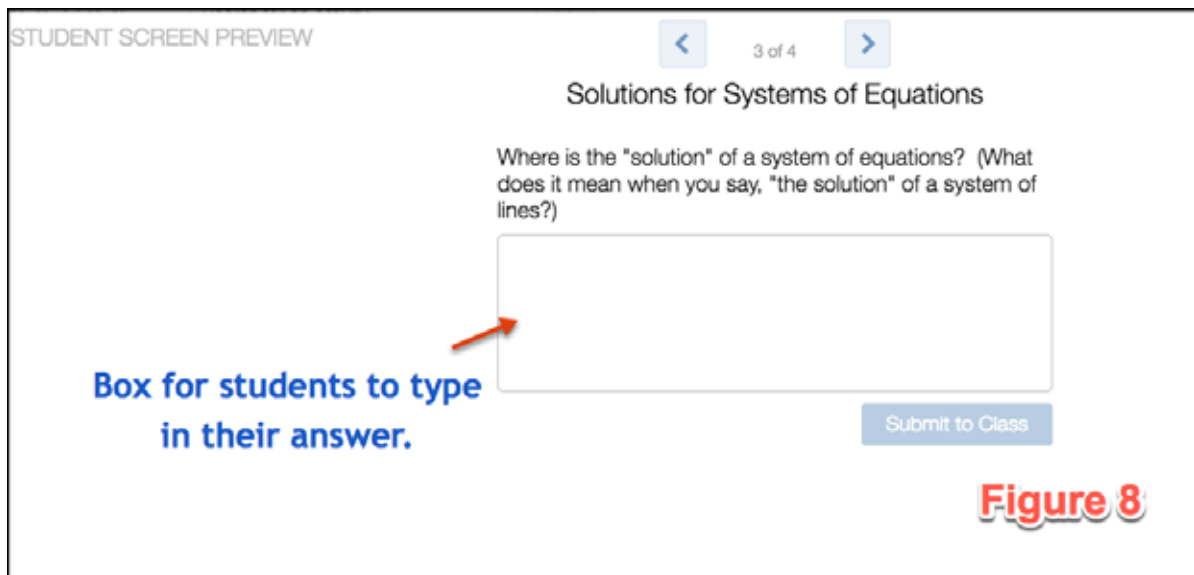

Figure 5

The second screen will look like this (Figure 6) to students.
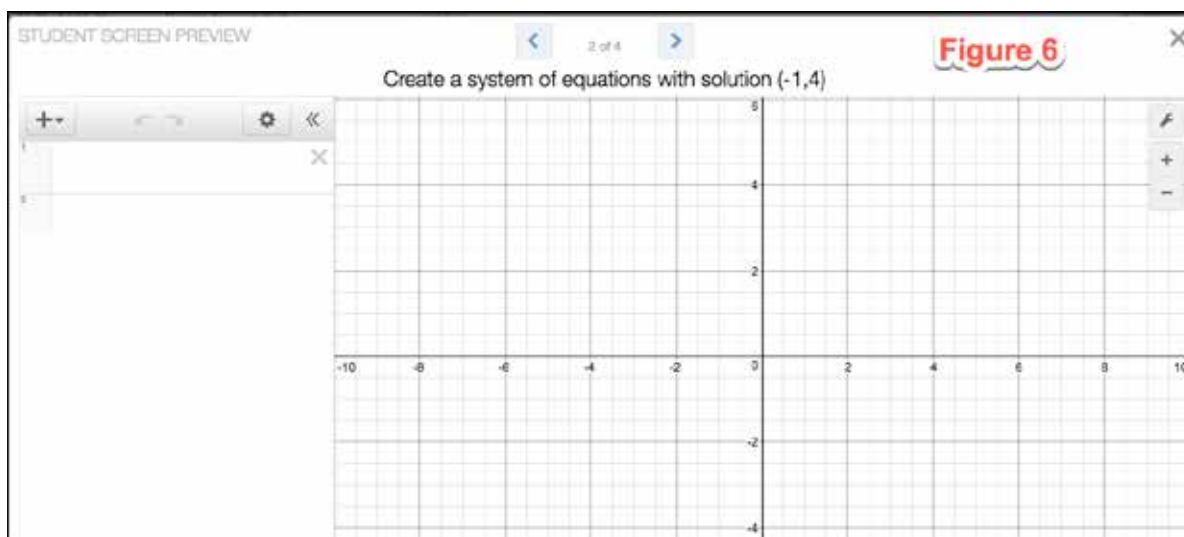
The Desmos activities can be made thought provoking by posing questions to the students and letting them submit their responses to the class. Students can see other responses when at least three responses have been submitted. As the activity progresses, the teacher has the option to pause the activity, review the collective responses and start a discussion. Students can be given an opportunity to clarify and explain their answers or discuss the validity of the response of a peer. In our third screen (Figure 7), we will add a 'Note' to pose questions and use 'Input' to provide a box for students to write in their answers and submit to Class.

The screen will look like this (Figure 8) to students:
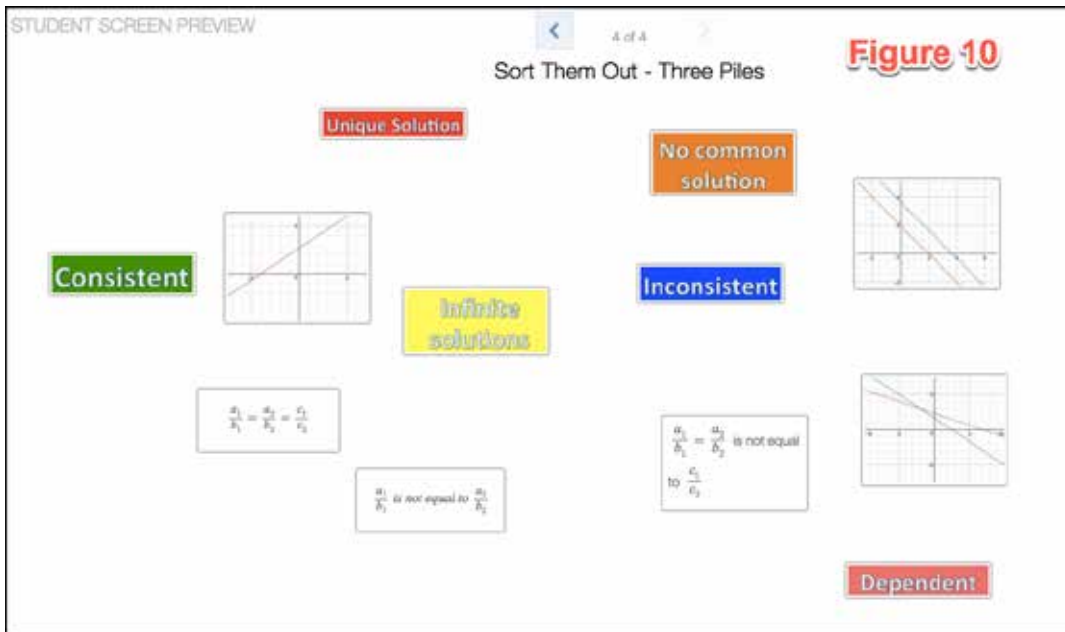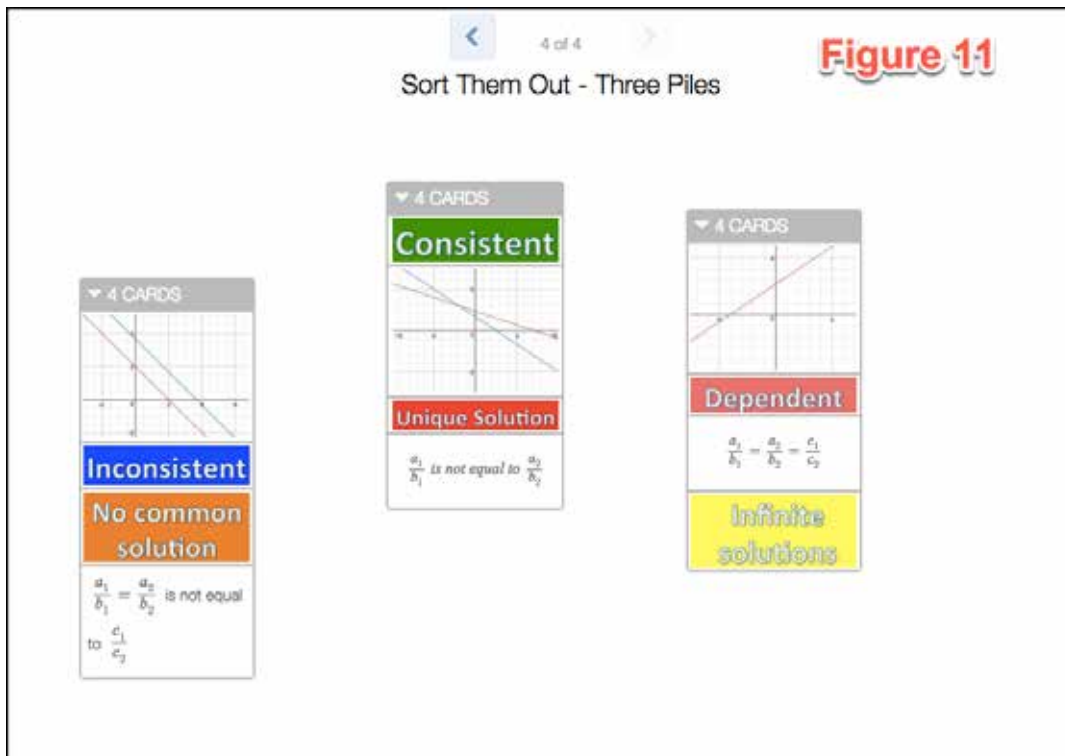

Figure 8

Adding in 'Card Sort' can further enhance the activities. To use 'Card Sort' one must enable it under the 'Labs' option in the screen. Cards using Text (includes Math text), Image and Graph (Figure 9) can be used to design activities which allow students to review their math vocabulary, definitions, concepts and work with multiple representations.
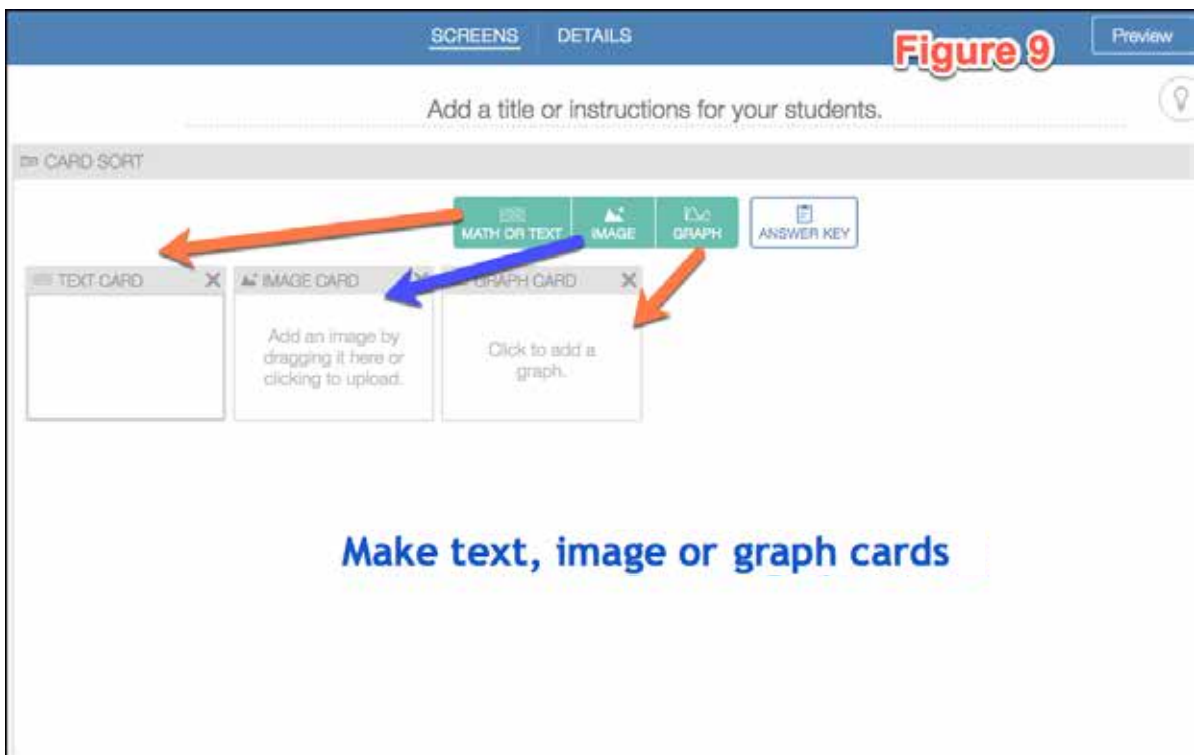
Figure 9

In this activity (Figure 10), students are required to sort the twelve cards into three piles according to the nature of the solutions of the pairs of linear equations. For each pile, text, image and graph cards have been made. You can make as many cards as you want but too many cards to sort and pile may confuse the students.

Figure 10

On clicking, the card magnifies so that a small text can also be easily read. Students can drag and drop cards to get them linked and create piles (Figure 11).

Figure 11

Before concluding the activity, click on Answer Key (Figure 12) and create the key which will be used to check students' work in the dashboard.

Group cards to create an answer key
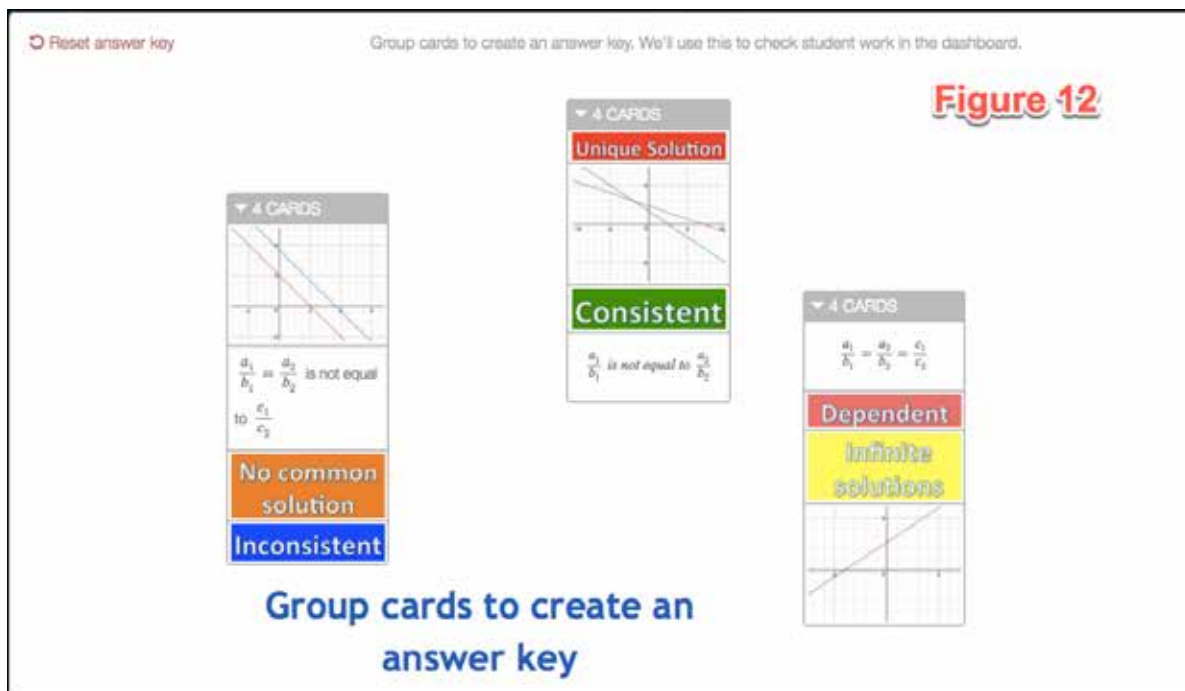
As the activity progresses the teacher is able to see individual screens and identify students who need help. Through the dashboard (Figure 13) an overall view of each screen helps to identify common mistakes and incorrect responses.

The greatest merit of the activities created via the Desmos Activity Builder is that students can be given multiple learning opportunities. It could be using the 'Graph' feature to plot, reflect and express their understanding in the form of responses to the questions asked, share their work with peers, and review their learning. In addition, such activities are often looked at as a game by many students, thus making it fun to learn maths.

The teacher has the advantage of seeing the work of students 'live' during the class. She also has the option to pause the class and to discuss students' responses, identify those who need individual attention,

and give each student a chance to learn at her own pace. The teacher is empowered with this tool as it allows her to customize activities exclusively for her students and also cater to their individual needs.

Go ahead, create one for yourself and try it with your students.
Resources for Activity Builder:

https://teacher.desmos.com/

http://learn.desmos.com/create

https://tackk.com/desmosab

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