Custom Build Interactive Online Discussion Activities

I build custom, interactive, online discussion activities that give students the freedom to create their own problems, and to evaluate and verify other students' work. Students are exposed to a multitude of perspectives and have the ability to learn and grow from each other as well as from the teacher. Rewards and video clips give students a sense of accomplishment for completing the task. Students can correct their mistakes without the fear of losing points. The activities are engaging and require higher-level processing skills than many other assignments that could be given over the same lesson.

1st Discussion Example: "Kukri Village – Expressing Yourself!"

Wake up!

Today is the day the boy without a fairy will finally begin his journey. The Great Deku Tree, protector of the forest realm, has summoned you, but it is dark outside and the night is young. Navi the sprite has been sent forth to be your guide on this perilous adventure, but first you must equip yourself with a sword and shield. Complete this activity below and Milo, the gate keeper, shall let you pass. **(click here)**

$a = 3$

$b = -2.5$

$c = 3/2$

$d = 0$

$e = 12.6$

$f = -11$

$g = 7$

$h = 3/4$

$i = \sqrt{3}$

$j = 16$

$k = -18$

$l = 0.5$

$m = -1.25$

$n = \sqrt{5}$

$o = 2\sqrt{3}$

$p = 1/3$

$q = 9/4$

$r = -0.125$

$s = 49$

$t = -22$

$u = -2/3$

$v = 1$

$w = \pi$

$x = \sqrt{2}$

$y = 8$

$z = -3\sqrt{2}$

Short clip of Milo blocking you from progressing!

Step 1) Either describe an algebraic expression in words or write an algebraic expression in a comment below. The expression must contain three or more variables and use at least two different operations (Be creative!). You are able to type in math equations and expressions in the comments using the "insert equation". Trying using some words from page two of your PAK!

Step 2) Respond to someone else's post by either converting their words into an algebraic expression, or vise-versa. Then evaluate their solution based on the substitutions given above.

Step 3) Verify someone else's post. Were they correct? Did you agree or disagree with them? If you disagree, explain why.

Reward for Completion: "Navigator" Badge

Navi - Awarded for finding the expression of light! Now you will always have someone to guide you through the dark realms of Algebra II. Next stop, the Great Deku Tree!

Navigator

Student Rubric:

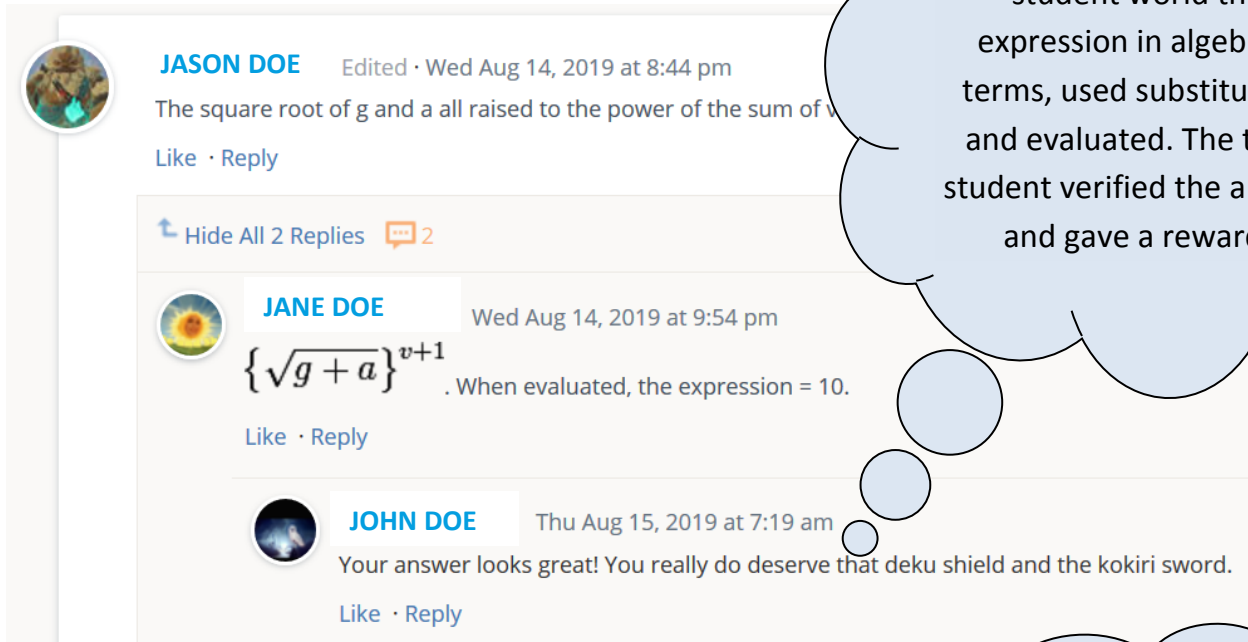| Criteria	Grading Scale		
Initial Post Did you describe an expression in words or did you write an algebraic expression?	**2** Excellent	**0** Needs Improvement	
Reply to a Classmate Did you convert a classmate's post into either words or an algebraic expression? Did you evaluate their expression correctly?	**2** Successfully converted a classmate's expression and evaluated it correctly.	**1** Either successfully converted a classmate's expression or evaluated it correctly, but not both.	**0** Failed to respond to a classmate's post.
Verify a Solution Did you provided meaningful and accurate feedback?	**2** Provided meaningful feedback and verified a classmate's expression and solution.	**1** Provided unhelpful feedback or incorrectly verified a classmate's expression and solution.	**0** Failed to verify a classmate's post.
			Total pts: 6

1st Discussion Example: "Kukri Village – Expressing Yourself!"

Student Examples:

Ex. 1)

JASON DOE Edited · Wed Aug 14, 2019 at 8:44 pm

The square root of g and a all raised to the power of the sum of v
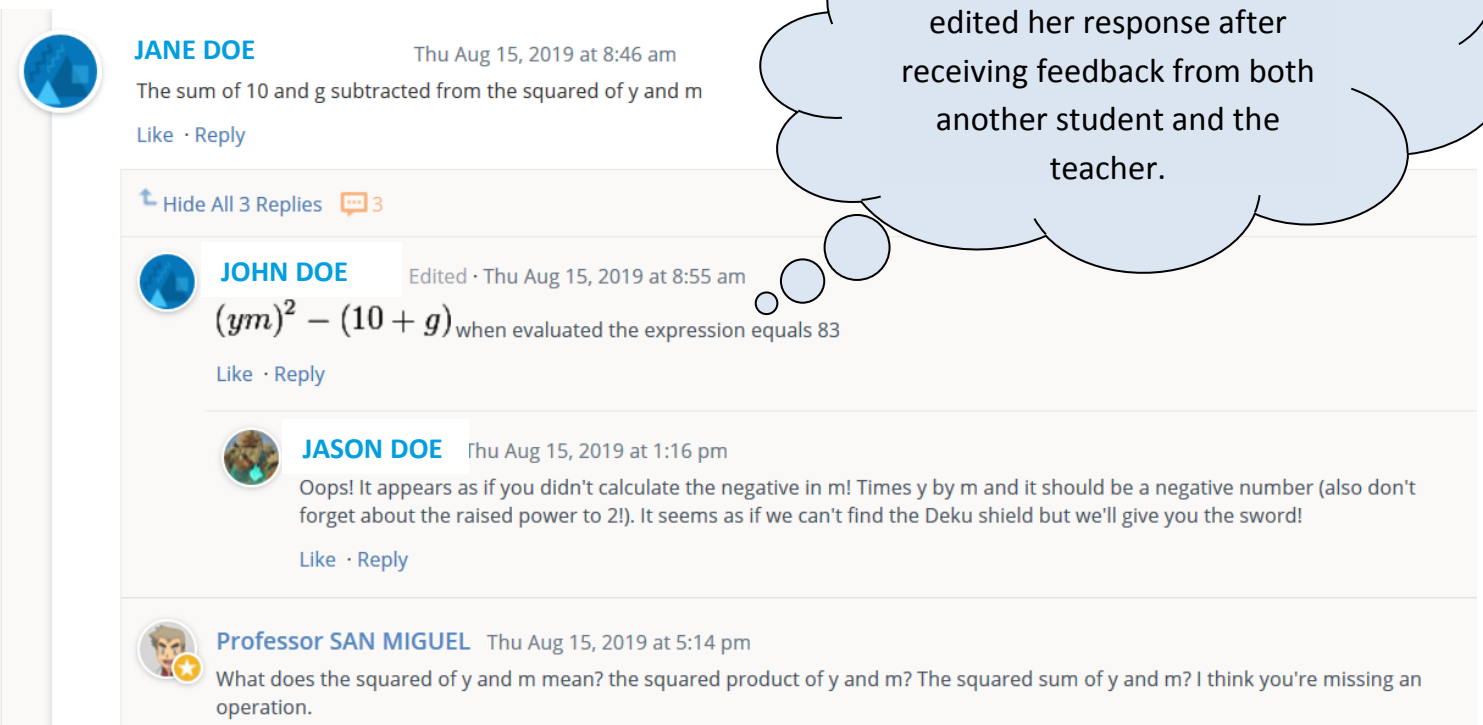
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JANE DOE Wed Aug 14, 2019 at 9:54 pm

$$\{\sqrt{g+a}\}^{v+1}$$. When evaluated, the expression = 10.

Like · Reply

JOHN DOE Thu Aug 15, 2019 at 7:19 am

Your answer looks great! You really do deserve that deku shield and the kokiri sword.

Like · Reply

> The first student described an expression. The second student world the expression in algebraic terms, used substitution, and evaluated. The third student verified the answer and gave a reward.

Ex. 2)

JANE DOE Thu Aug 15, 2019 at 8:46 am

The sum of 10 and g subtracted from the squared of y and m

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JOHN DOE Edited · Thu Aug 15, 2019 at 8:55 am

$$(ym)^2 - (10+g)$$ when evaluated the expression equals 83

Like · Reply

JASON DOE Thu Aug 15, 2019 at 1:16 pm

Oops! It appears as if you didn't calculate the negative in m! Times y by m and it should be a negative number (also don't forget about the raised power to 2!). It seems as if we can't find the Deku shield but we'll give you the sword!

Like · Reply

Professor SAN MIGUEL Thu Aug 15, 2019 at 5:14 pm

What does the squared of y and m mean? the squared product of y and m? The squared sum of y and m? I think you're missing an operation.

> The student went back and edited her response after receiving feedback from both another student and the teacher.

1st Discussion Example: "Kukri Village – Expressing Yourself!"

Short Video Clips:

Video Clip #1 – [Milo Block](#)

Shown first to understand why you can't progress further in the course:

Video Clip #2 – [Earning your shield](#)

Video Clip #3 – [Earning your sword](#)

Students award other students the sword and shield if they answer the post correctly.

Optional Badge Award: "Characters of the Week"

Each week I have a new character of the week. Students can earn a special badge to display on their profile by temporarily changing their profile picture to any picture of the iconic character.

Link

Awarded for proudly displaying the character of the week! Link is the main protagonist of the Legend of Zelda series.

2nd Discussion Example: "A Foxy Inequality"

Princess Zelda has tasked you with stoping the dark and mysterious Ganondorf, who pretends to be a loyal advisor to the king of Hyrule. You must collect the spiritual stones before him, and thwart his sinister plans. The next stone rests in the home of the Goron race, a rock city at the top of Death Mountain.

On your way to Death Mountain, you pass through Kariko Village, which gaurds the only entrance that leads up to the deadly volcano. **The guard will not let you pass!** He is demanding a mask, but not just any mask, the very popular fox mask, also known as the Keaton mask. He claims its for his 'son', but he can't leave his post to purchase it! Complete the side-quest below to earn the mask and gain passage to Goron City!

Step 1) Give two different inequalities, but describe one of the inequality symbols in words! Label them E1 and E2. Only one of the equations can be written in slope-intercept form. The other can be in any other format you choose. Then state three points, two of which are solutions to at least one inequality, and one solution which is a solution to both inequalities. The third point should not be a solution to either inequality. Label these points P1, P2, and P3. (You may want to draw some quick sketches to visualize your inequalities and their solutions). Mix these points up!

Step 2) Respond to someone else's post by first stating which inequality symbol represents their description. Then determine which points are solutions to each inequality. Show your math.

Step 3) Verify someone else's post. Where they on target? Did they correctly identify the solutions to each inequality? If so, you trust their math and **agree to hire them to be a sales person for the Happy Mask Shop!** You lend them the Keaton Mask to **sell to the guard!**

Example 1:

Student A: E1: y < 2x - 1   E2: 5y - 6x is at most 10.   P1: (0, 5) P2: (-2, -1) P3: (4,3)

Student B:

E1: y < 2x - 1   P1: 5 < 2(0) - 1 , 5< -1 ✗   P2: -1 < 2(-1) - 1 , -2 < -3 ✗   P3: 3 < 2(4) + 1, 3 < 8 ✓

E2: 5y - 6x ≤ 10   P1: 5(5) - 6(0) ≤ 10, 25 ≤ 10 ✗   P2: 5(-1) - 6(-2) ≤ 10 , 7 ≤ 10 ✓   P3: 5(4) - 6(3) ≤ 10 , 2 ≤ 10 ✓

Student C: Your inequality sign is perfect At most is indeed represented by ≤ ! The solutions you've provided are flawless. You are quite the mathematician. I could use someone like you. Part-time, no more than 5 hours a week. 10 rupees an hour.You'll take it?!?! Great! Here, take this "**Keaton Mask**" . Its very popular. I'm sure you'll find a buyer.

 Or

Student C: Hmmm, if you want a job, you'll need to correct your inequality sign. At most is represented by ≤ ! The solutions you've provided are close! Check your E1: P1. You're not there yet, but with enough practice you'll get there. Fix those mistakes and you're hired....5 rupees an hour.

(You are welcome to update your post AFTER you first submit it, but post a response to your grader so that I know you've made corrections. You do not have to be extra, but I would appreciate you following the theme here. Feel free to improvise.)

Below are some signs that you can copy and paste into your submission:

< > ≤ ≥ X ✓ →

2nd Discussion Example: "A Foxy Inequality"

In this activity, students must not only create their own system of linear inequalities, they must also find points which satisfy none, one, or both inequalities.

Reward for Completion: "Keaton Mask" Badge

Keaton Mask

Awarded for becoming a salesperson for the Happy Mask Shop. You are filled with determination to sell more mask and you can't stop smiling ^_^

Student Rubric:

Criteria	Grading Scale			
Initial Post Did you give two inequalities and three points, two of which were solutions to the inequalities?	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
Reply to a Classmate Did you convert the inequality description into the right symbol? Did you correctly identify the solutions to each inequality?	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
Verify a Solution Did you verify another student's solutions? Did you hire a new employee? Did you wear a happy face while doing it?	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement

Total pts: 12

Short Video Clips:

Video Clip #1 – The Guard

Shown first to understand why you can't progress further in the course:

Video Clip #2 – Getting the Mask

Students award other students the mask as if they were the hiring manager from the Happy Mask Shop.

Video Clip #3 – The Guard Letting You Pass

The guard then is sold the mask and students can progress!

2nd Discussion Example: "A Foxy Inequality"

Student Example:

JANE DOE Tue Sep 10, 2019 at 10:36 am

E1: 8y+4x≥64 **E2:** y is less than or equal to 5x+6

P1: (2, 5) **P2:** (3,22) **P3:** (-2,1)

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JOHN Tue Sep 10, 2019 at 6:59 pm

E1: 8(5)+4(2)≥64, 48≥64 ✗   8(22)+4(3)≥64, 188≥64 ✓   8(1)+4(-2)≥64, 0≥64 ✗

E2: 5≤5(2)+6, 5≤16 ✓   22≤5(3)+6, 22≤21 ✗   1≤5(-2)+6, 1≤ -4 ✗

Like · Reply

JASON DOE a Tue Sep 10, 2019 at 8:06 pm

Your inequality sign is perfect At most is indeed represented by ≤ ! The solutions you've provided are flawless. You are quite the mathematician. I could use someone like you. Part-time, no more than 5 hours a week. 10 rupees an hour. You'll take it?!?! Great! Here, take this "Keaton Mask" . It's very popular. I'm sure you'll find a buyer.

Like 😄 1 · Reply

Click to quickly grade student post by clicking on scores!

JASON DOE

Criteria	Rating				Pts
Initial Post Did you give two inequalities and three points, two of which were solutions to the inequalities?	4 Excellent	3 Good	2 Satisfactory ✓	1 Needs Improvement	2
Reply to a Classmate Did you convert the inequality description into the right symbol? Did you correctly identify the solutions to each inequality?	4 Excellent ✓	3 Good	2 Satisfactory	1 Needs Improvement	4
Verify a Solution Did you verify another student's solutions? Did you hire a new employee? Did you wear a happy face while doing it?	4 Excellent	3 Good	2 Satisfactory ✓	1 Needs Improvement	2

Manage Rubrics   Total pts: 8   /12

Save   Cancel

3rd Discussion Example: "Flower Power Graphing Activity"

In this activity, the students must practice finding solutions using technology (TI-84) and post an image or screenshot of their calculations.

Big Brother Darunia, leader of the Goron Tribe, **is waiting for the Royal Messenger (click me)** to arrive. You have stated many times that you ARE that messenger, but he thinks you're just some child. Convince him that you have the power to graph and find solutions, and make him dance with fire as he realizes you may be the chosen one. Only then, will he give you the power to handle bomb flowers, which only grow on Death Mountain and explode on impact.

Step 1) State any consistent and independent system of two equations that have a large C and/or decimal values for A,B, and C. At least one equation must be in standard form. Choose systems whose **intersections cannot be graphed easily on paper**. Other students should need to zoom out or change the default window to find the solution!

Step 2) **Using a TI-83/84 calculator**, graph ANOTHER student's system of equations, change the window to view the solution, and then calculate the intersection using the calculate feature. Then either take a screen shot of that intersection if using the Wabbit emulator, or use a camera phone to take a picture of the intersection. Post that image into a post below. Be sure that the solutions are visible on the image! Once you post the image, you may have to click it to edit/shrink the size so it doesn't take up too much space.

Step 3) Verify another classmate's solution by graphing it yourself and finding the solution. Then if they were correct, congratulate your fellow classmate, for they successfully found the intersection of the system and posted the graph of it, proving that they are indeed the royal messenger. Reward them with the **"Goron's Bracelet".**

Example 1:

Student (Durunia) A: If you're really the royal messenger, what is the solution to the system of equations, $200x - 500y = 1260$, $y = 18.9x - 600$?

Student (Link) B:

Durunia, I graphed your solutions and your solution was approximately (32.3, 10.4). Here is my proof!
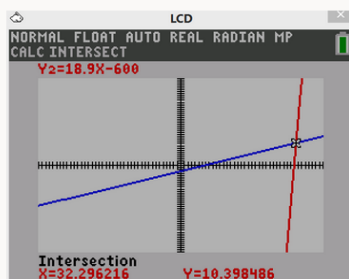
Student (Darunia) C: Wow. That solution....is correct! What a fiery graph that is! Is it just me, or is it getting hot in here? I just want to dance! No one but the royal messenger could have solved that! Here, take **this bracelet**. It'll allow you to pick up bomb flowers without them exploding.

Or

Student C: ....I'm not convinced you are who you say you are. Did you solve your equations correctly for y?

(You are welcome to update your post AFTER you first submit it, but post a response to your grader so that I know you've made corrections. You do not have to be extra, but I would appreciate you following the theme here. Feel free to improvise or make your responses your own.)

3rd Discussion Example: "**Flower Power Graphing Activity**"

Reward for Completion: "**Goron's Bracelet** " Badge

Goron's Bracelet

Awarded for completing the
Flower Power Graphing Activity!
+ 5 STR +5 DEX

Student Rubric:

Criteria	Grading Scale			
Initial Post Did you give a system of linear equations that has exactly one solution?	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
Reply to a Classmate Did you solve the system of equations correctly for y? Did you find the point of intersection using the TI correctly? Did you include a screenshot or image of the graph?	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
Verify a Solution Did you verify another student's solutions? Do you have the sudden urge to dance? Are you feeling "hot" ? Did you reward a classmate the "Goron's bracelet"?	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement
				Total pts: 12

Short Video Clips:

Video Clip #1 – Entering Goron City

Shown first to understand why you can't progress further in the course:

Video Clip #2 – How to Graph and Find Intersections on TI-84+

My own recorded video showing step by step how to find intersections using the TI-84+ calculator.

Video Clip #3 – Obtaining the Prize

Big Brother Darunia (student role-playing) awards the other student the bracelet if they're correct.

3rd Discussion Example: "Flower Power Graphing Activity"

Student Example:

JANE DOE   Wed Sep 11, 2019 at 7:34 pm

If you are really the royal messenger, what is the solution to the system of equations? 450x-25y=2460, y=3.6x+30.

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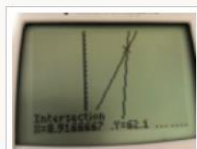
⤴ Hide All 3 Replies 💬 3

> **JOHN DOE** ▎ Thu Sep 12, 2019 at 8:37 pm
>
> I found the solution and it is (8.92, 62.1) Here is my proof:
>
>
>
> Like · Reply

> **JASON**   Thu Sep 12, 2019 at 9:28 pm
>
> Wow. That solution....is correct! What a nice graph that is! No one but the royal messenger could have solved that! Here, take this Gorgon's Bracelet.
>
> Like · Reply