Interactive Economics Instruction with Amplify Activity Builder

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Abstract

This paper introduces Amplify Activity Builder as a flexible, browser-based platform for interactive economics instruction. Although widely used in mathematics and science education, Activity Builder has received little attention in economics pedagogy. We show how instructors can use the platform to create low-preparation classroom experiments and graph-based activities that collect student responses, generate real-time visualizations, and support instructor-led debriefing. Three principles-level microeconomics activities are presented: a repeated-consumption exercise on diminishing marginal utility, a reservation-price activity on market demand aggregation, and a labor-supply exercise on adverse supply shocks. We also illustrate how Activity Builder can support in-class review through graph construction, randomized questions, correctness checks, and iterative feedback. The paper provides implementation guidance, discusses limitations, and positions Activity Builder as a complement to dedicated economics experiment platforms and LMS-integrated homework systems. Its main contribution is to show how instructors can use a low-cost, modifiable platform to create student-generated data, visual economic models, and reusable activities for active learning in economics.

Keywords: Economics education; open educational resources; classroom experiments

JEL Codes: A20; A22; C90.

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1. Introduction

Undergraduate economics instruction has increasingly adopted technological tools that support active, data-driven learning. Yet many platforms used for classroom experiments, visualizations, and economic games remain costly, difficult to modify, or dependent on technical expertise. This paper introduces Amplify Activity Builder as a free-to-use, browser-based platform for interactive economics instruction, with particular relevance for principles-level microeconomics.

Originally developed for secondary mathematics education through the Desmos classroom ecosystem, Activity Builder allows instructors to create activities that combine interactive graphs, sliders, polls, open-ended prompts, and real-time response tracking. The platform is widely used in mathematics and science education (Orr, 2017; TLS & Herman, 2020; DeGilio, 2022; Russell & Potratz, 2023), but its application in economics remains limited. This paper highlights its potential for building economics activities that combine student choice, classroom data collection, graphical visualization, and instructor-led debriefing.

Activity Builder is especially attractive for economics instruction for three reasons. First, it is free-to-use, reducing adoption barriers for instructors and students. Second, activities can be copied, modified, and adapted with limited programming experience, allowing instructors to tailor examples to their own courses. Third, the platform can aggregate and visualize student responses in real time, making it well suited for formative assessment and active learning. These features align with broader efforts to expand low-cost and open educational resources, which can improve affordability and support student access (Hilton III, 2016; Grimaldi et al., 2019).

These advantages are particularly relevant because economics has relatively few open, modifiable platforms for interactive classroom activities beyond textbooks and pre-designed experiment libraries. Tools such as MobLab, VeconLab, and classEx have helped instructors run classroom experiments, but they are often organized around fixed experiment structures

or, in some cases, paid access. Activity Builder occupies a different niche: it allows instructors to build and revise graph-intensive, discussion-oriented activities around their own examples, prompts, and learning objectives.

Classroom experiments and simulations have long been used to illustrate foundational economic concepts (Allgood et al., 2015). Prior work suggests that these approaches can improve engagement and deepen conceptual understanding when paired with clear instructional goals and feedback (Kaplan & Balkenborg, 2010; Emerson & English, 2016; Raboy, 2017). Activity Builder extends this tradition by allowing instructors to move quickly from individual student responses to aggregate classroom outputs that can be interpreted during class. Its browser-based format also makes the same activities usable in face-to-face, remote synchronous, hybrid, or self-paced settings.

This paper makes three contributions. First, it introduces Activity Builder as an underused tool for economics instruction. Second, it presents three replicable principles-level microeconomics activities: a repeated-consumption exercise on diminishing marginal utility, a reservation-price activity on market demand, and a labor-supply activity on adverse supply shocks. Third, it shows how Activity Builder can support broader graph-based review through correctness checks, student-drawn curves, randomized or instructor-modifiable graphs, and iterative feedback.

The goal is therefore both practical and developmental. By documenting these activities and providing instructor-facing implementation materials, the paper aims to lower the start-up cost for instructors new to Activity Builder. More broadly, it encourages economics educators to adapt, revise, and share Activity Builder activities as part of a larger collection of open, modifiable teaching tools for the discipline.

2. Platform Overview: What is Amplify Activity Builder?

Amplify Activity Builder is an online platform for creating and delivering interactive, browser-based learning activities. Activities are organized as sequences of screens that can include

graphs, sliders, tables, multiple-choice questions, open-ended prompts, sketches, images, and response displays. Instructors can use these elements to build activities in which students manipulate parameters, submit decisions, draw or interpret graphs, and respond to conceptual prompts.

A key feature of Activity Builder is its Computation Layer (CL), a lightweight scripting language that controls how activity components interact. CL can be used to restrict inputs, randomize parameters, check answers, display conditional feedback, link student responses to graphs, and aggregate classroom data. Although more advanced activities require some familiarity with CL, basic activities can be built by modifying existing screens and examples. This makes the platform accessible to instructors who are willing to make small adaptations but do not have formal programming backgrounds (DeGilio, 2022).

Activity Builder also includes a teacher dashboard that supports real-time classroom management. As students work through an activity, instructors can view responses individually or in summary form, pace students through selected screens, pause the activity, anonymize responses, and display selected or aggregated outputs for discussion. These features are especially useful for formative assessment: instructors can identify common errors, decide when to intervene, and use student-generated outputs as the basis for whole-class debriefing.

Relative to platforms commonly used for classroom economics experiments—including MobLab, classEx, and VeconLab—Activity Builder occupies a distinct niche. As Atwood et al. (2023) describe, economics experiment platforms vary in cost, registration requirements, customization options, instructional support, and suitability for synchronous or asynchronous delivery. These platforms are often well suited for ready-made experiments, auctions, public goods games, repeated strategic interaction, automated payoff calculation, and participant matching. Activity Builder is less specialized, but more flexible for instructor-authored graphical activities. It allows instructors to combine student input, visual modeling, correctness checks, pacing, and debriefing within a single browser-based environment.

This distinction is important for economics instruction. Activity Builder is not a direct substitute for dedicated experiment platforms. Rather, its comparative advantage lies in activities that are graphical, scaffolded, and easily adapted to local instructional goals. Instructors can copy an existing activity, change the context or parameters, revise prompts, add teacher notes, or adjust feedback logic. This makes Activity Builder useful for classroom experiments, graph-based practice, remote or hybrid participation, and reusable activities built around concepts that instructors already teach.

Although Activity Builder remains underused in economics, related work in mathematics and science education illustrates its broader pedagogical potential. In mathematics, Activity Builder has been used to support function transformation activities in which students manipulate graphs and observe changes in real time (Orr, 2017). It has also been used for optimization and linear programming activities built around interactive constraints and feasible regions (TLS & Herman, 2020). In chemistry, Russell and Potratz (2023) use Activity Builder to guide undergraduate students through nonlinear curve fitting and binding interactions. These examples show that the platform can support structured, graphical, and feedback-oriented instruction across disciplines. Economics instruction shares many of these needs, especially in principles courses where students must connect individual choices, graphical models, and aggregate outcomes.

3. Application in Economics Instruction

The activities described in this section were developed for undergraduate principles of microeconomics courses enrolling students with limited prior exposure to formal economic modeling. They were used as short, formative in-class exercises within standard units on consumer choice, demand, supply, and market adjustment. They are therefore presented as practical teaching examples rather than as independent evidence of learning gains.

We focus on three activities that meet three criteria: they address widely taught principles-level concepts, require little preparation beyond launching the Activity Builder session, and

produce class-level outputs that can be used immediately for discussion. Detailed instructor-facing materials, including activity links, materials, implementation guidance, and debrief questions, are provided in Appendix A.

The activities move from individual decision-making to market aggregation: a repeated-consumption activity on diminishing marginal utility, a reservation-price activity on market demand, and a labor-supply activity based on students' willingness to perform a classroom task. Together, they show how Activity Builder can support individual reflection, collective data generation, graphical visualization, and instructor-led debriefing.

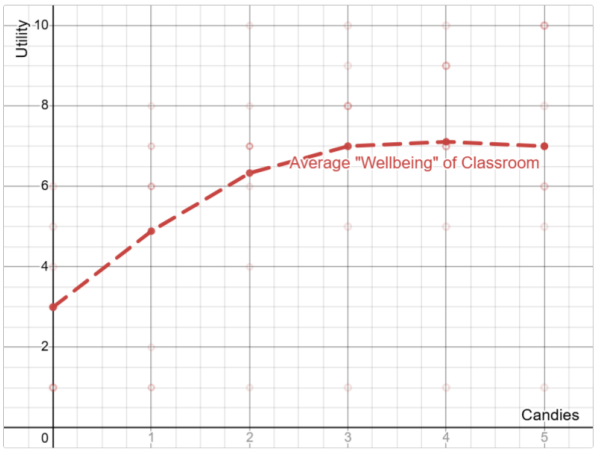
3.1. Candy Preferences and Diminishing Marginal Utility

The first activity introduces diminishing marginal utility through a repeated-consumption exercise. Like prior classroom experiments on marginal utility and diminishing marginal returns, it asks students to generate the data used to motivate the concept, rather than treating the marginal schedule as a purely abstract object (Vazquez-Cognet, 2008; Raboy, 2017). Students first report their baseline "well-being" on a 10-point scale. The instructor then distributes one small piece of candy or a similar treat, after which students update their reported well-being. This process is repeated across several rounds, allowing students to distinguish total utility from marginal utility as additional units are consumed.

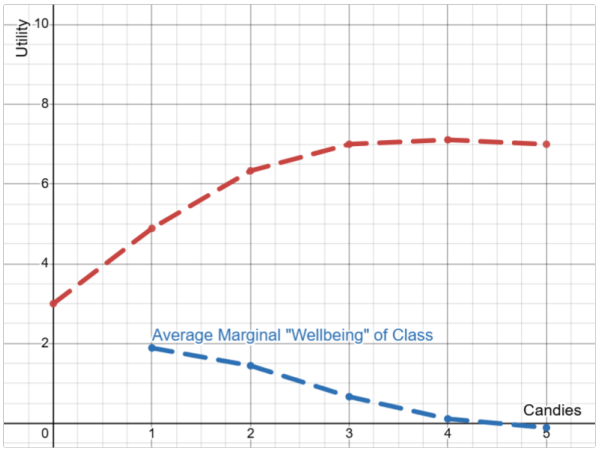
The activity's value comes from the way Activity Builder transforms subjective individual responses into class-level visualizations. After the response rounds are complete, the activity plots average reported well-being against the number of candies consumed, with individual student responses shown as faded points. A subsequent screen computes the change in average well-being across rounds. Figure 1 illustrates the output shown before the debrief. In this example, average well-being rises initially but begins to flatten as additional candies are distributed, while marginal well-being declines and eventually approaches zero.

These outputs create a natural transition to discussion. Students can compare the total and marginal well-being curves, consider why later units may provide smaller gains, and

Figure 1: Illustrative Activity Builder output from the Candy Preferences activity.



(a) Average reported well-being



(b) Marginal change in average well-being

Panels (a) and (b) are screen captures of the actual Activity Builder output displayed in the browser during the Candy Preferences activity. After students submit their well-being ratings across consumption rounds, the activity aggregates the responses and displays the graphs back to students before the debrief. Panel (a) shows individual student responses as faded points and the class average as the red dashed line. Panel (b) adds the implied marginal change in average reported well-being across rounds in blue. These visualizations allow students to observe the distinction between total and marginal utility using data generated from their own classroom responses.

ask whether the same pattern applies to other goods. Because the activity requires only a browser-based session and a small consumable item, it can be implemented quickly in large or small classes. It can also be adapted for a volunteer-based format when distributing materials to all students is impractical.

3.2. Market Demand and Reservation Prices: Mint Demand

The second activity shows how individual demand decisions can be aggregated into a market demand curve. Students first imagine that a store clerk is willing to sell individual mints from a package containing eight pieces. They complete a demand schedule indicating how many mints they would purchase at different prices. Activity Builder then generates each student's individual demand curve and the classroom's aggregate market demand curve.

This stage allows students to see market demand as the aggregation of individual quanti-

ties demanded at each price. After the curves are displayed, students are asked whether their own demand curve and the classroom demand curve are consistent with the law of demand. This prompt moves students beyond memorizing that demand curves slope downward and asks them to evaluate whether that relationship emerges from their own choices. Irregular individual responses can also be used to discuss noisy data, inattentive responses, or the distinction between individual and aggregate patterns.

The activity then shifts from a conventional demand schedule to a reservation-price exercise. Students are told that the clerk will sell only the entire package, so each student reports the maximum amount they would be willing to pay for the pack. This structure follows related teaching applications that use willingness-to-pay elicitation to make consumer valuation and surplus concepts concrete in introductory economics (Schubert, 2023). Activity Builder aggregates these reservation prices to construct a market demand curve for the indivisible good. Figure 2 shows the output students observe after submitting their responses. The figure illustrates how the distribution of maximum willingness-to-pay responses can generate a downward-sloping market demand curve even when each student is deciding whether to purchase a single indivisible good.

The debrief connects the two parts of the activity. In the first stage, market demand is built by horizontally aggregating individual demand schedules. In the second, it is derived from the distribution of reservation prices. Comparing these approaches helps students see that familiar demand relationships can emerge from different forms of individual choice data.

3.3. Market Supply: Sign Spinners and Labor Supply

The third activity introduces market supply through a labor-market scenario. Students decide how many hours they would be willing to work as sign spinners at different hourly wages. They first complete a labor supply schedule under ordinary working conditions. Activity Builder then generates each student's individual labor supply curve and the classroom's aggregate labor supply curve.

Figure 2: Reservation prices and market demand in the mints activity

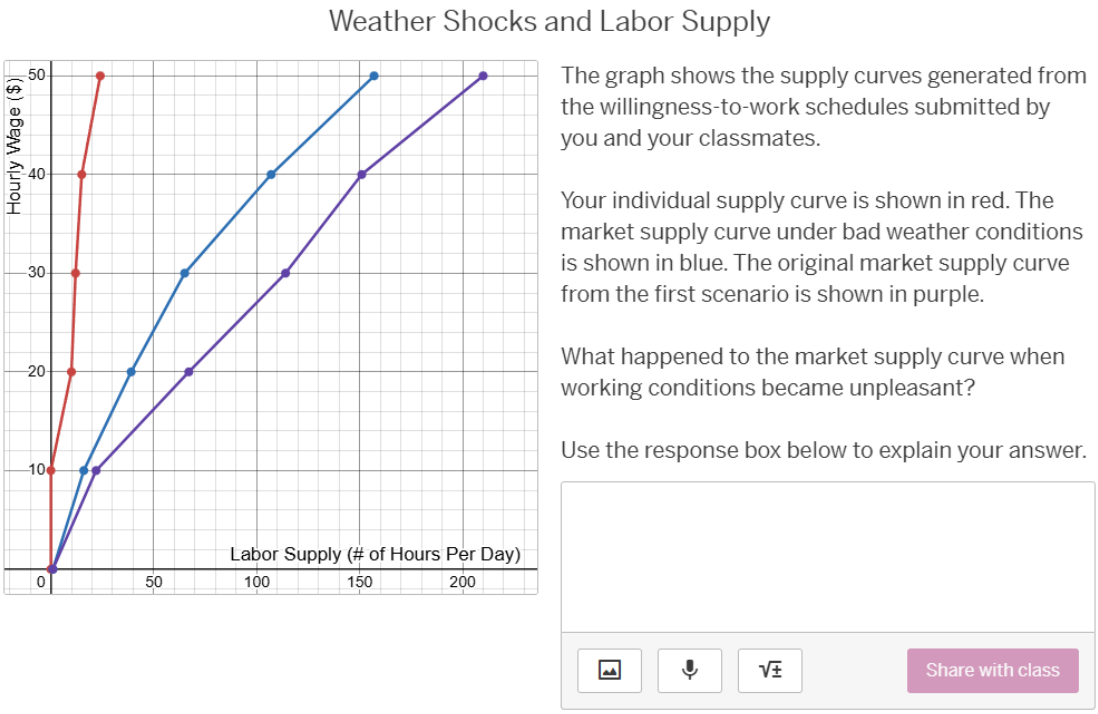
This figure is a screen capture of the actual Activity Builder output displayed in the browser during the Mint Demand activity. After students report their maximum willingness to pay for the full pack, Activity Builder uses the submitted reservation prices to generate an individual demand curve, shown in blue, and a classroom-level market demand curve, shown in red. The visualization is displayed back to students before the debrief and illustrates that a familiar downward-sloping market demand curve can be derived from the distribution of reservation prices, even when students are considering the purchase of a single indivisible good.

This design gives students an empirical basis for understanding upward-sloping supply. Rather than beginning with a pre-drawn curve, students make decisions as potential workers and then observe the curve generated from those decisions. The scenario also makes opportunity cost, reservation wages, and non-wage job characteristics more concrete. In this respect, the activity is related to prior participatory labor-market classroom experiments that ask students to make labor-supply decisions and use those decisions to teach wages, reservation wages, and employment outcomes (Garces-Ozanne & Esplin, 2010).

The second stage introduces an adverse supply shock. Students reconsider their willingness to work when the sign-spinning job must be performed in unpleasant weather. After students update their labor supply schedules, Activity Builder displays the revised market

supply curve alongside the original curve. This comparison helps distinguish movement along a supply curve from a shift of the supply curve. Holding wages fixed, worse working conditions reduce the quantity of labor students are willing to supply, producing a leftward or upward shift in labor supply. Figure 3 shows the corresponding Activity Builder output.

Figure 3: Weather shocks and labor supply in the Sign Spinners activity



This figure is a screen capture of the actual Activity Builder output displayed in the browser during the Sign Spinners activity. After students first submit baseline willingness-to-work schedules, Activity Builder generates individual and market labor supply curves. Students then revise their responses under adverse weather conditions, and the activity displays the updated market supply curve alongside the original curve. In the figure, the individual supply curve is shown in red, the revised market supply curve is shown in blue, and the initial market supply curve from the previous scenario is shown in purple. The visualization is displayed back to students before the debrief and supports discussion of non-wage job characteristics, supply shifts, and predicted equilibrium wage and employment effects.

The debrief extends naturally from the visualized supply shift to equilibrium reasoning. If labor demand is held fixed, the adverse weather shock should place upward pressure on wages and downward pressure on employment. The activity therefore provides a compact way to move from individual labor supply decisions to market supply aggregation and comparative

statics.

4. Broader Use Cases: Graph-Based Assignments, Visual Feedback, and Correctness Checks

The experiments above emphasize Activity Builder's value for collecting and visualizing classroom data. The platform can also support more structured forms of in-class practice, especially for graph-heavy topics where students benefit from immediate feedback and instructors benefit from real-time visibility into student progress. To illustrate this broader use case, this section describes a graph-based review activity in which students construct, interpret, and apply economic diagrams across several principles-level topics. A public version of the activity is available online.[1]

The review activity is designed as a formative exercise rather than as a replacement for conventional homework. Students begin by reviewing the structure of standard economic graphs, including the placement of price and quantity on the vertical and horizontal axes. They then use embedded graphing tools to sketch demand and supply curves from schedules, identify market equilibrium, compute and interpret production cost measures, and analyze short-run and long-run decisions for a perfectly competitive firm. These tasks ask students to use graphs as working economic models, not merely to recognize familiar shapes.

The activity demonstrates several capabilities beyond response collection. Activity Builder can support graph construction directly within the browser, allowing students to plot points, connect schedules into curves, and represent demand, supply, equilibrium, and cost relationships. It can also accept multiple forms of input, including numerical answers, multiple-choice responses, written explanations, and graphical submissions. Finally, the Computation Layer can be used to check selected responses and provide feedback to both students and the instructor.

[1] `https://classroom.amplify.com/activity/6a24a8364bc3f008e105fc1f`

4.1. Correctness Checks and Iterative Feedback

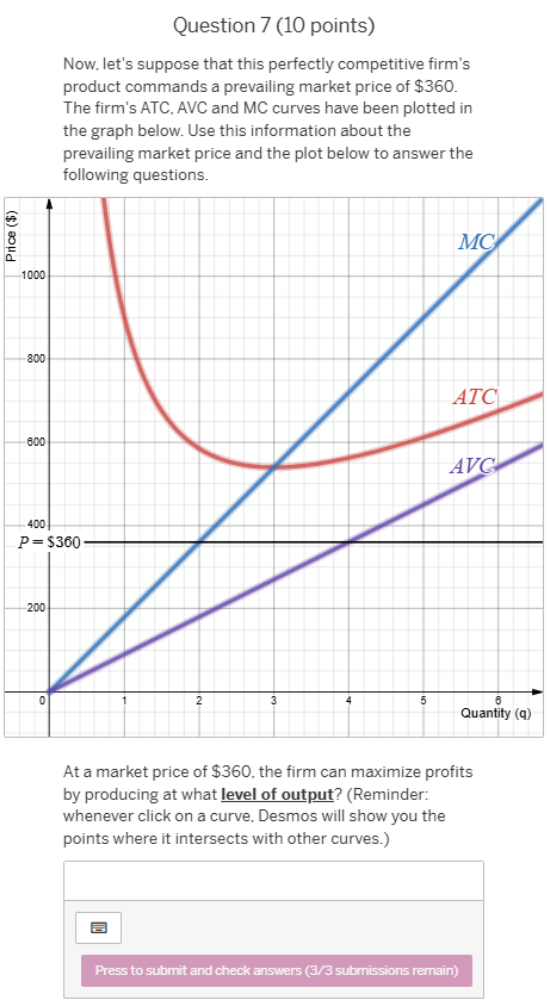
A central advantage of Activity Builder for in-class assignments is its ability to provide low-stakes, iterative feedback. In a conventional paper-based exercise, students may complete several parts of a graphing problem incorrectly before receiving any correction. In Activity Builder, instructors can instead program answer checks that allow students to test and revise responses while the activity is underway. In the review activity described here, selected questions allow three checks, although this limit is customizable. Instructors could allow unlimited attempts for formative practice, restrict attempts for a quiz-like exercise, or remove student-facing feedback while preserving instructor-facing correctness indicators.

This feature is especially useful for multi-step graphical problems. If students misidentify graph axes, incorrectly plot a demand schedule, or misread the intersection of two curves, later equilibrium or comparative-statics questions become harder to answer correctly. Activity Builder's feedback tools allow students to catch some of these mistakes before they compound. From the instructor's perspective, correctness indicators also make it easier to identify common errors during class and intervene before students move too far ahead.

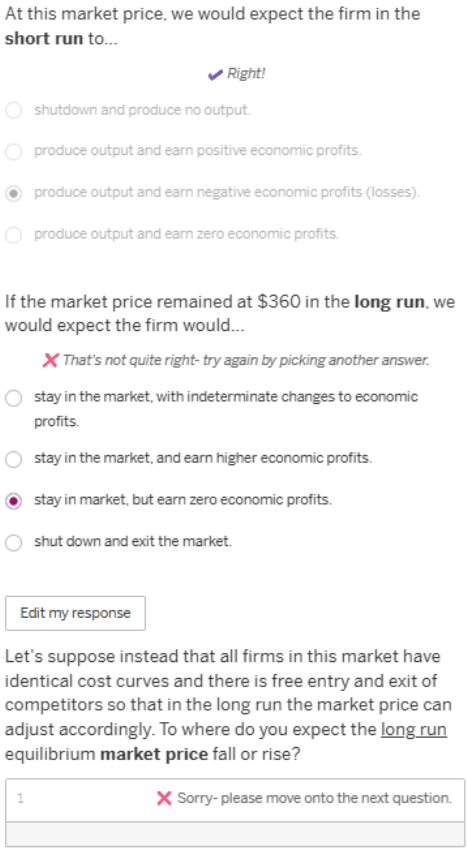
Figure 4 illustrates this functionality in a perfectly competitive firm problem. Students are shown a firm diagram and asked to answer numerical and conceptual questions about output choice, short-run outcomes, and long-run adjustment. Panel (a) shows a numerical response prompt before submission, while Panel (b) illustrates several feedback states, including confirmation of a correct response, corrective feedback when additional attempts remain, and feedback after checks have been exhausted.

The same feedback structure is useful for group work. Students can solve a problem collaboratively, submit a shared answer, and revise their reasoning if the activity indicates that their response is incorrect. In this setting, feedback functions less as grading than as a prompt for discussion. Activity Builder therefore occupies a useful middle ground between paper worksheets and publisher-provided homework systems: it cannot fully automate grading, but it can make in-class practice more interactive, transparent, and responsive.

Figure 4: Example of graph-based problem solving and feedback in Activity Builder



(a) Randomized graph-based question



(b) Correctness checks and adaptive feedback

Notes: Panels (a) and (b) are screen captures of actual Activity Builder output displayed in the browser during a graph-based review activity. Panel (a) shows a perfectly competitive firm diagram before the student has submitted the initial numerical response. The activity uses the graph to pose multiple questions about output choice, short-run outcomes, and long-run adjustment. Panel (b) shows follow-up questions based on the same graph and illustrates several forms of correctness feedback, including confirmation of a correct response, corrective feedback when additional attempts remain, and a locked response state once the allotted checks have been exhausted. Together, the panels show how Activity Builder can combine graph-based problem solving, randomized question generation, and iterative formative feedback within a single browser-based activity.

4.2. Graphical Problem Solving

Activity Builder is particularly valuable for topics that require students to construct, interpret, or manipulate economic graphs. The review activity illustrates this through a sequence of graphical tasks: students identify graph axes, sketch demand and supply curves from schedules, locate equilibrium, connect cost formulas to cost curves, and interpret firm decisions using plotted price and cost relationships.

These tasks are difficult to reproduce as effectively on paper. Students can interact with the graph itself by drawing curves, plotting points, identifying intersections, or using graph-based information to answer numerical and conceptual questions. This is especially helpful for students who struggle to connect algebraic calculations, tabular values, and graphical representations. Because responses can be monitored in real time, the instructor can pause after difficult screens, address common errors, or highlight selected responses for whole-class discussion.

The broader value is that complex exercises can be scaffolded into smaller steps. Rather than asking students to solve a full market or firm problem at once, Activity Builder can guide them through the sequence: identify axes, plot points, connect curves, locate intersections, interpret the result, and answer a follow-up question. This structure supports active learning sessions in which students move between individual work, peer discussion, and instructor-led debriefing.

4.3. Role Relative to LMS-Based Homework

Despite these advantages, Activity Builder should not be treated as a full substitute for LMS-integrated homework systems or publisher-provided assessment platforms. Its strengths are clearest in formative, instructor-mediated contexts: in-class practice, group review, graphing exercises, and guided applications of recently covered concepts. It is less well suited for high-stakes homework or summative assessment. Partial-credit scoring is difficult to program, especially for multi-part questions with several possible pathways to a correct an-

swer. Activity Builder also lacks several features common to dedicated homework systems, including robust LMS gradebook integration, automatic score synchronization, and reliable submission-time tracking.

Academic-integrity concerns further limit its usefulness as a stand-alone homework platform. Because Activity Builder does not include watermarking or a secure assessment environment, students can more easily share screenshots, answers, or activity links. These limitations do not undermine its value as a teaching tool, but they clarify its appropriate role. Activity Builder is best understood as a flexible environment for formative assessment and interactive practice rather than as a replacement for graded homework infrastructure.

For this reason, the review activity is included not as a central justification for adopting Activity Builder, but as evidence of the platform's broader instructional range. The classroom experiments demonstrate its ability to generate and visualize student data; the review activity demonstrates its ability to support graph construction, individualized problem-solving, instructor-modifiable practice, correctness checks, and iterative feedback. Together, these uses suggest that Activity Builder can complement existing economics teaching tools by making instructor-designed, graph-intensive activities more interactive and easier to monitor than traditional paper-based classwork.

5. Implementation Guidance and Limitations

The examples above show that Activity Builder can support classroom experiments, graph-based review, and formative feedback, but successful use still requires planning. The appendices provide activity links, instructor guides, and a screen-by-screen walkthrough. This section instead summarizes broader considerations for instructors who wish to adapt these materials or develop similar activities of their own.

5.1. Preparing, Running, and Adapting Activities

Instructors can begin by copying an existing activity and modifying it to fit their course context. Before using an activity with students, instructors should preview the student experience, test any Computation Layer logic, and identify where the activity should be paused for discussion. This preparation is especially important for activities that rely on randomized parameters, correctness checks, or automatically generated graphs.

During class, the teacher dashboard is the main tool for managing the activity. Instructors can monitor student progress, pace students through selected screens, pause the activity, anonymize responses, and display selected or aggregated outputs for discussion. These features are useful in face-to-face courses and especially valuable in remote synchronous or hybrid settings, where instructors may otherwise have fewer cues about student progress or confusion.

The same activity structure can often be reused across course contexts. A demand activity built around mints could be modified to use coffee, campus parking, or streaming subscriptions. A labor supply activity could be reframed around tutoring, food delivery, campus employment, or gig work. Graph-based review activities can likewise be adapted by changing parameter values, randomization ranges, prompts, or the number of correctness checks allowed. This flexibility is central to Activity Builder's value: instructors need not build each activity from scratch, but can revise existing activities to match their own examples, pacing, and learning goals.

5.2. Limitations

Activity Builder also has limitations. First, more sophisticated activities require some familiarity with the Computation Layer. Basic activities can be created with little technical expertise, but randomized questions, adaptive feedback, and correctness checks require additional testing. This learning curve is manageable, especially when instructors begin by modifying existing activities, but it should not be ignored.

Second, Activity Builder depends on student access to internet-connected devices. This is not unusual for classroom technology, but it creates practical constraints. Instructors should consider whether students are expected to bring laptops, tablets, or phones; whether classroom internet access is reliable; and whether an alternative participation option is needed.

Third, Activity Builder is not ideal for every kind of economics experiment. It is strongest when the activity centers on individual responses, graphing, aggregation, visual feedback, or guided problem-solving. It is less naturally suited to complex multiplayer games that require participant matching, repeated strategic interaction, monetary payoff calculations, or private information across many rounds.

Finally, Activity Builder does not eliminate the need for instructor debriefing. The platform can collect responses, generate graphs, and provide correctness feedback, but the economic interpretation still depends on the instructor. This distinction is important because feedback is most effective when it helps students understand the task, their current performance, and how to improve, rather than merely indicating whether an answer is right or wrong (Hattie & Timperley, 2007).

5.3. Relationship to Dedicated Economics Experiment Platforms

Activity Builder should be viewed as a complement to dedicated economics experiment platforms such as MobLab, VeconLab, and classEx. Those platforms are better suited for many standard economic experiments, including auctions, public goods games, repeated strategic interactions, and activities requiring automated payoff calculations or participant matching. They also provide ready-made experiment libraries and, in some cases, detailed instructor support materials.

Activity Builder's comparative advantage is different. It allows instructors to create and modify browser-based activities that combine student input, graphical visualization, correctness checks, pacing, and instructor-led debriefing in a single environment. It is particularly useful when an instructor wants to adapt an activity to a specific course context, build an

exercise around a custom graph, or generate classroom data from student responses without adopting a full experimental platform. In this sense, Activity Builder fills a useful gap between paper-based classroom exercises and more specialized economics experiment software.

6. Conclusion

This paper introduces Activity Builder as a practical, low-cost, and modifiable platform for interactive economics instruction. Although originally developed for mathematics education, Activity Builder has features that are well suited to principles-level economics: browser-based access, real-time response collection, graphical visualization, instructor pacing tools, and customizable feedback through the Computation Layer.

The examples presented here illustrate these affordances across several instructional settings. The Candy Preferences activity uses repeated student responses to motivate diminishing marginal utility. The Mint Demand activity shows how individual demand schedules and reservation prices can be aggregated into market demand curves. The Sign Spinners activity uses labor supply decisions to illustrate both market supply aggregation and supply shifts. The graph-based review activity further demonstrates how Activity Builder can support student-drawn curves, randomized graphical problems, correctness checks, and iterative feedback.

Activity Builder should not be understood as a replacement for dedicated economics experiment platforms or LMS-integrated homework systems. Platforms such as MobLab, VeconLab, and classEx remain better suited for many multiplayer experiments, auctions, and payoff-based games, while publisher homework systems remain better suited for graded assignments and LMS integration. Activity Builder's contribution is different: it provides an accessible environment for instructor-designed, graph-intensive, and easily modifiable classroom activities.

The broader goal of this paper is to encourage economics instructors to experiment with Activity Builder and adapt the examples provided here. Because activities can be copied,

modified, and shared, the platform is well suited to collaborative pedagogical development. A discipline-specific collection of Activity Builder exercises could reduce start-up costs for new adopters and expand the range of freely available, modifiable teaching tools in economics. Future work could evaluate the effects of these activities on student learning, compare Activity Builder with other instructional platforms, or develop additional activities for macroeconomics, econometrics, public finance, environmental economics, game theory, and other fields.

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A. Activity Guides for Classroom Implementation

A.1. Candy Preferences and Diminishing Marginal Utility

Activity link: `https://classroom.amplify.com/activity/6a248dcfbbe781156470c2b4`

Primary concepts: Total utility, marginal utility, diminishing marginal utility, subjective valuation.

Materials needed: Candy or another small consumable item. The activity can be run with the full class or with a selected group of volunteers.

Estimated time: 10–15 minutes, depending on the length of the debrief.

Activity overview: Students report their well-being on a 10-point scale before consuming any candy. The instructor then distributes one piece of candy and asks students to update their reported well-being. This process is repeated for six total rounds. Activity Builder collects the responses and generates plots of average reported well-being and marginal changes in well-being across consumption rounds.

Instructor procedure:

1. Launch the Activity Builder session and ask students to join using the session code or activity link.
2. Ask students to report their baseline well-being using the 10-point scale.
3. Distribute one piece of candy and ask students to update their reported well-being.
4. Repeat the distribution and reporting process for additional rounds.
5. Advance to the visualization screens showing average reported well-being and marginal changes in reported well-being.
6. Use the final discussion prompts to connect the activity outcomes to total utility and marginal utility.

Debrief questions:

1. What happened to average total reported well-being as additional pieces of candy were distributed?

2. What happened to the marginal change in reported well-being across rounds?

3. Did any students experience zero or negative marginal utility? Why might this occur?

4. Is this pattern specific to candy, or does it generalize to other forms of consumption?

5. How does this activity help explain why consumers may be willing to pay less for additional units of a good?

Implementation notes: The activity works best when students understand that the exercise is not about the objective value of candy, but about how the value of additional units changes with repeated consumption. If distributing candy to the entire class is impractical, the instructor can run the activity with volunteers and ask the rest of the class to predict the resulting utility pattern. Instructors may also substitute another low-cost item or adapt the prompt to a hypothetical repeated-consumption scenario. A screen-by-screen walkthrough of this activity is provided in Appendix C.

A.2. Market Demand and Reservation Prices: Mint Demand

Activity link: `https://classroom.amplify.com/activity/6a234cb6de1e4fb6897d820f`

Primary concepts: Law of demand, individual demand, market demand, reservation prices, maximum willingness to pay, aggregation.

Materials needed: None. All materials needed for the activity are embedded within Activity Builder.

Estimated time: 10–15 minutes, depending on the length of the debrief.

Activity overview: The activity proceeds in two stages. In the first stage, students complete a demand schedule for individual mints from a package containing eight pieces. Activ-

ity Builder uses these responses to generate each student's individual demand curve and the classroom's aggregate market demand curve. In the second stage, students consider the case in which the entire package must be purchased as a single indivisible good. Students report their maximum willingness to pay, or reservation price, and Activity Builder aggregates these responses to construct a market demand curve.

Instructor procedure:

1. Launch the Activity Builder session and ask students to join using the session code or activity link.

2. Ask students to read the opening scenario and complete the demand schedule for individual mints.

3. Advance to the visualization screen showing the student's individual demand curve and the classroom aggregate demand curve.

4. Use the embedded multiple-choice question to ask whether the individual and market demand curves are consistent with the law of demand.

5. Advance to the reservation-price scenario, in which the package must be purchased as a single indivisible good.

6. Ask students to report their maximum willingness to pay by dragging the package to the highest price they would be willing to pay.

7. Display the resulting individual and classroom demand curves based on the reservation-price responses.

8. Use the final discussion questions to connect the two parts of the activity.

Debrief questions:

1. Does moving from individual demand curves to a market demand curve violate the law of demand?

2. Why might some individual demand schedules be irregular, even if the aggregate market demand curve slopes downward?

3. How does the market demand curve emerge from the choices of individual consumers?

4. Do we need detailed demand schedules to derive familiar-looking demand curves?

5. How can a distribution of reservation prices generate a downward-sloping market demand curve?

Implementation notes: This activity works well as an early introduction to demand because it requires no physical materials and uses a familiar low-stakes consumer good. The first stage is useful for teaching horizontal aggregation, while the second stage helps students understand reservation prices and maximum willingness to pay. If students provide inconsistent demand schedules, instructors can use those responses to discuss careful interpretation of individual-level data and the difference between noisy individual responses and aggregate market regularities.

A.3. Sign Spinners and Labor Supply

Activity link: `https://classroom.amplify.com/activity/6a24892991576fca839ac041`

Primary concepts: Law of supply, individual supply, market supply, labor supply, reservation wages, non-wage job characteristics, supply shocks, equilibrium wage and employment effects.

Materials needed: None. All materials needed for the activity are embedded within Activity Builder.

Estimated time: 10–15 minutes, depending on the length of the debrief.

Activity overview: Students are asked to imagine working as sign spinners advertising a new sandwich shop. They first complete a labor supply schedule by reporting how many hours per day they would be willing to work at different hourly wages. Activity Builder uses these responses to generate each student's individual labor supply curve and the classroom's

aggregate labor supply curve. Students then repeat the exercise under adverse weather conditions, allowing the activity to visualize how an unpleasant change in working conditions shifts the labor supply curve.

Instructor procedure:

1. Launch the Activity Builder session and ask students to join using the session code or activity link.

2. Ask students to read the opening sign-spinner scenario and complete the labor supply schedule under ordinary working conditions.

3. Advance to the visualization screen showing the student's individual supply curve and the classroom aggregate supply curve.

4. Use the embedded multiple-choice question to ask whether the individual and market supply curves are consistent with the law of supply.

5. Advance to the adverse-weather scenario, in which students are told that sign-spinning conditions have become miserable.

6. Ask students to update their labor supply schedules under the new working conditions.

7. Display the revised individual and market labor supply curves alongside the original curves.

8. Use the final discussion questions to connect the observed supply shift to equilibrium labor-market outcomes.

Debrief questions:

1. Are the individual and market labor supply curves consistent with the law of supply?

2. What happens to the labor supply curve when working conditions become unpleasant?

3. Is the weather change best understood as movement along the supply curve or a shift of the supply curve?

4. If demand for sign-spinning labor remains unchanged, what should happen to the equilibrium wage?

5. What should happen to the equilibrium quantity of sign-spinning labor employed?

6. How do non-wage job characteristics affect labor supply decisions?

Implementation notes: This activity works well after students have already seen demand aggregation, because the structure parallels the mint demand activity while shifting attention to producer or worker-side decision-making. Some students may report the same number of hours at all wages or provide non-monotonic responses. These responses can be used to discuss opportunity cost, binding time constraints, inattentive responses, or the possibility that some individuals have strong preferences against particular forms of work. The adverse-weather scenario is especially useful for distinguishing changes in quantity supplied from shifts in supply.

B. Graph-Based Review Activity

Activity link: `https://classroom.amplify.com/activity/6a24a8364bc3f008e105fc1f`

Primary concepts: Demand and supply graphing, market equilibrium, production costs, perfectly competitive firm decisions, short-run and long-run adjustment.

Recommended use: In-class review, group problem-solving, or low-stakes formative practice.

Estimated time: 20–35 minutes, depending on whether students complete the full activity individually or in groups.

Activity overview: This activity demonstrates Activity Builder's usefulness for graph-based review and formative feedback. Students begin by reviewing how standard economic graphs are organized, then sketch demand and supply curves from schedules, identify equilibrium price and quantity, work through production cost concepts, and answer questions about firm behavior in perfect competition. Selected questions use correctness checks, allowing students to revise responses before moving forward.

Implementation notes: The activity is best used as an instructor-mediated review exercise rather than as a high-stakes homework assignment. Instructors may allow students to work individually or in small groups, pause after graphing screens for whole-class discussion, and use the dashboard to identify common errors before moving to later questions.

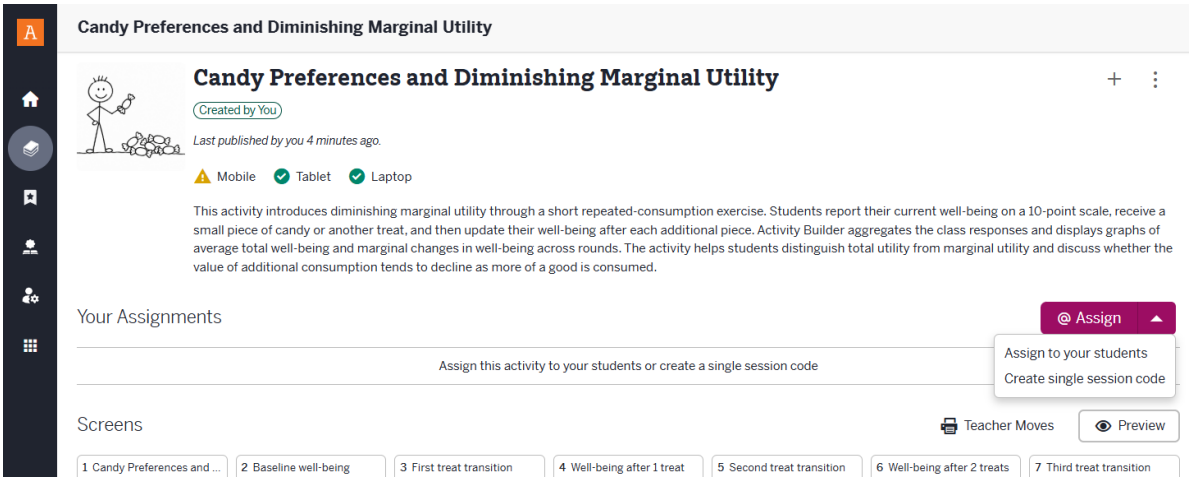
C. Screen-by-Screen Walkthrough of the Candy Preferences Activity

This appendix provides an illustrative walkthrough of the Candy Preferences activity. The purpose is not to reproduce every screen in the activity, but to show how an instructor can launch an Activity Builder session, invite students, monitor participation, pace the activity, and use student-generated outputs for debriefing. The example uses the Candy Preferences and Diminishing Marginal Utility activity because it is intentionally simple, low-preparation, and representative of the workflow used in the other activities described in the paper.

C.1. Creating a Classroom Session

The instructor begins from the activity landing page. From this page, the instructor can preview the activity, review teacher moves, assign the activity, or create a live classroom session. For an in-class experiment, the most direct option is to select "Create single session code" from the assignment menu. This generates a temporary session that students can join during class.

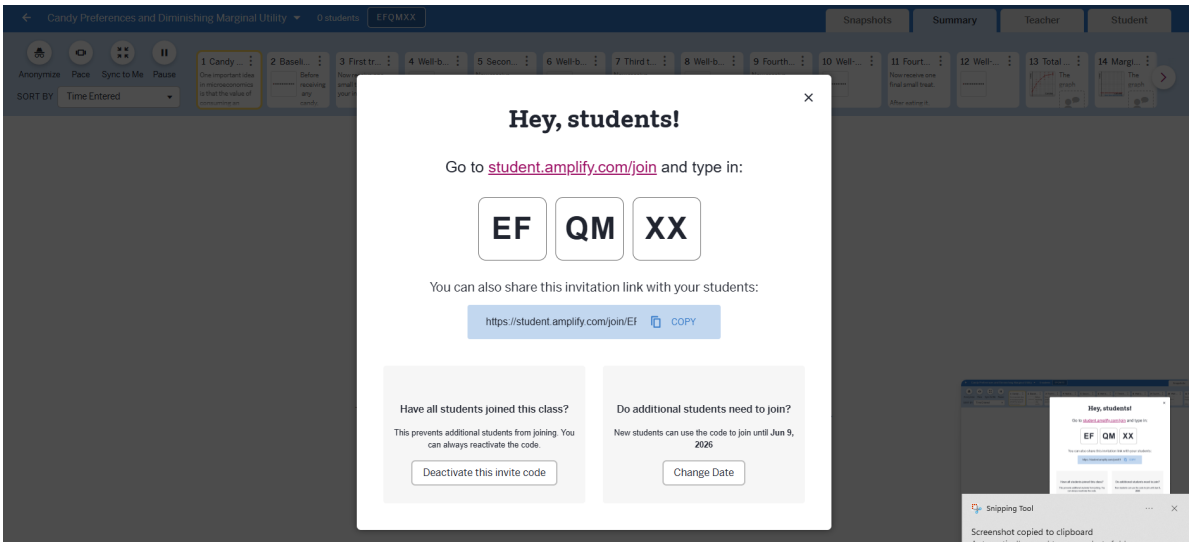
Figure C1: Creating a live classroom session



C.2. Sharing the Session Code

After the instructor creates a session, Activity Builder displays a join code and a direct invitation link. Students may join by visiting the student join page and entering the code, or by following the shared link directly. The instructor can project this screen, copy the link into the learning management system, or share it through a videoconference chat.

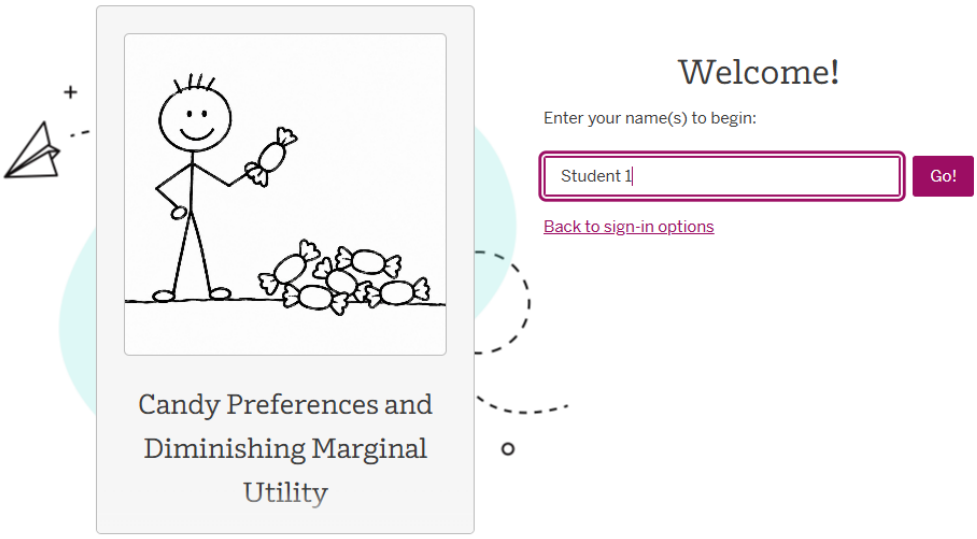
Figure C2: Sharing the session code with students



C.3. Student Entry

Students who follow the session link arrive at the activity join screen. They may sign into Amplify or proceed without signing in by entering a name. For short in-class activities, allowing students to enter a name without creating an account reduces friction and helps the instructor begin the activity quickly.

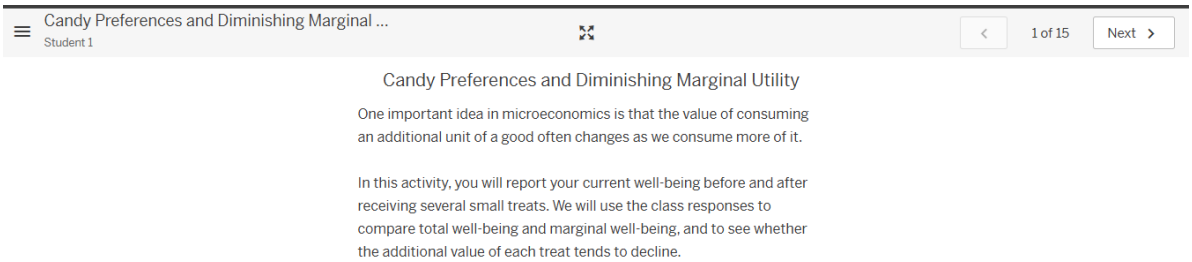
Figure C3: Student join screen



C.4. Student-Facing Activity Setup

Once students enter the activity, the first screen introduces the purpose of the exercise. In the Candy Preferences activity, students are told that they will report their well-being before and after receiving several small treats. The activity explains that the class responses will be used to compare total well-being and marginal well-being, providing a direct bridge to the economic concept of diminishing marginal utility.

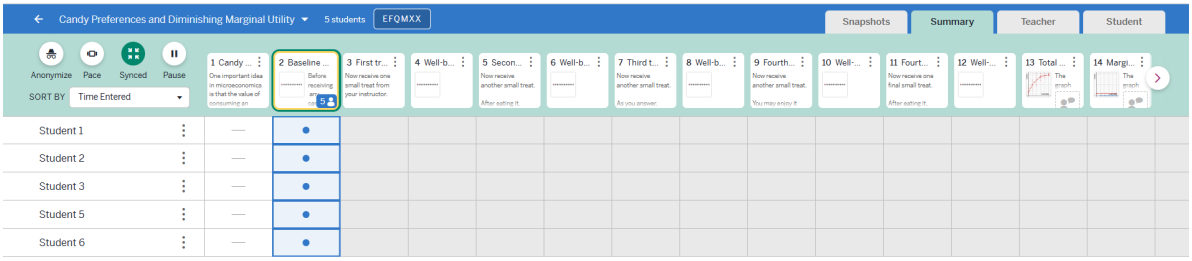
Figure C4: Student-facing setup screen



C.5. Monitoring Progress with the Teacher Dashboard

During the activity, the instructor can monitor student progress using the teacher dashboard. In the summary view, each row corresponds to a student and each column corresponds to an activity screen. For screens that collect student input, filled circles indicate that a student has submitted a response. In this example, the activity is run with sync enabled, which keeps students on the same screen as the instructor. This is recommended for many classroom experiments because it prevents students from moving ahead before the instructor has distributed materials, displayed output, or led discussion.

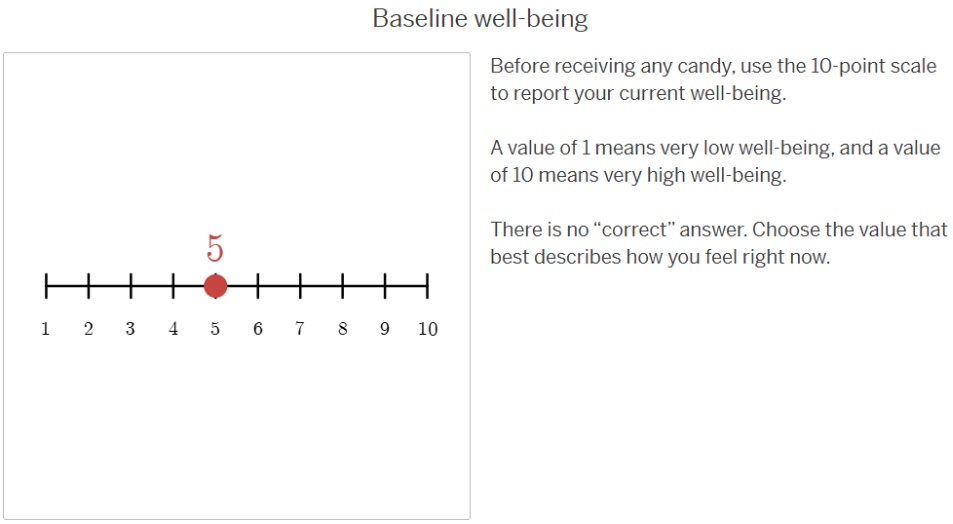
Figure C5: Teacher dashboard summary view



C.6. Collecting Baseline Well-Being

Before receiving any candy, students report their current well-being using a 10-point scale. This baseline response provides the starting point for the total and marginal well-being plots generated later in the activity. The instructor should emphasize that the response is subjective and that there is no correct answer.

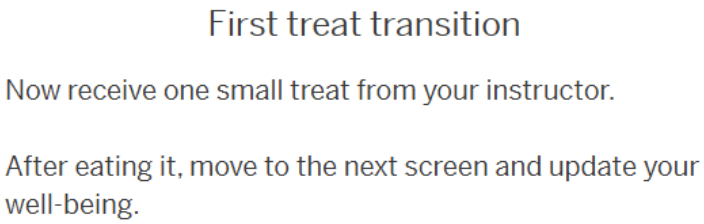
Figure C6: Baseline well-being input



C.7. Pacing Consumption Rounds

Between response screens, students see transition screens while the instructor distributes the next piece of candy or treat. These screens help pace the activity and prevent students from submitting responses before the relevant consumption round has occurred. Instructors can use these moments to distribute the next treat, remind students to wait before advancing, or briefly preview the next response task.

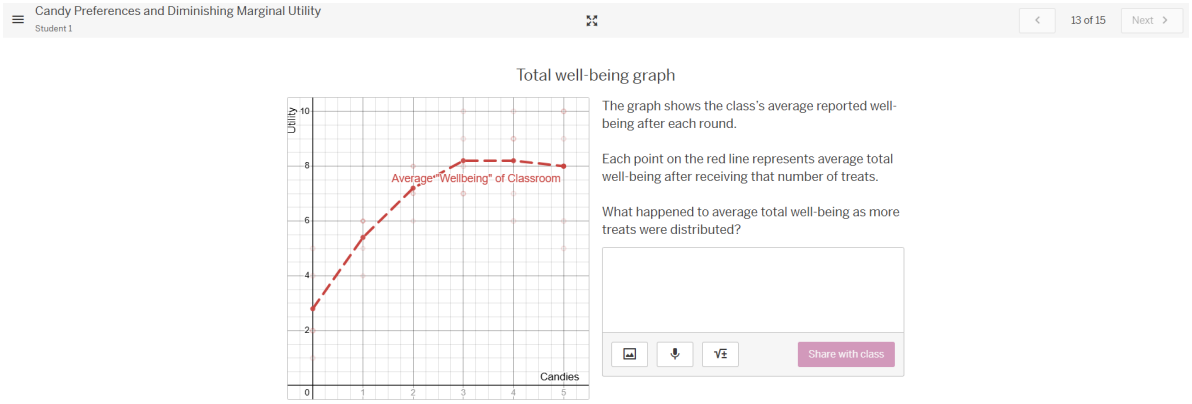
Figure C7: Transition screen between consumption rounds



C.8. Displaying Average Well-Being

After the response rounds are complete, Activity Builder aggregates the submitted responses and displays the class average well-being across consumption rounds. Individual responses are also shown as faded points, allowing students to see both the class-level pattern and the variation across students. This screen provides the basis for discussing total utility.

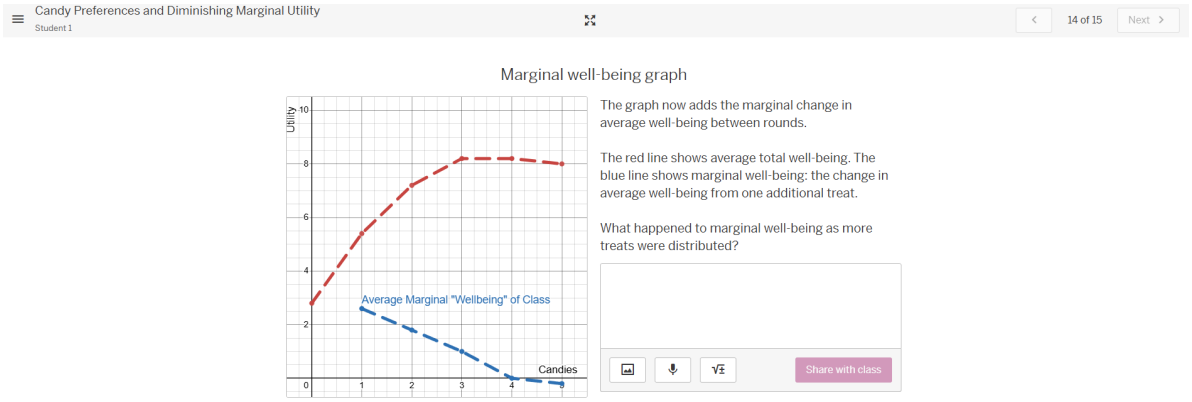
Figure C8: Average well-being output



C.9. Displaying Marginal Well-Being

The next screen adds the marginal change in average well-being between rounds. The red line continues to show average total well-being, while the blue line shows the change in average well-being from each additional treat. This visualization allows the instructor to distinguish total utility from marginal utility and to motivate the concept of diminishing marginal utility using classroom-generated data.

Figure C9: Marginal well-being output



C.10. Debriefing the Activity

The activity concludes with a written debrief prompt. Students are asked to interpret what happened to average total well-being, what happened to marginal well-being, and whether the observed pattern generalizes to other forms of consumption. The instructor can use student responses to connect the activity to total utility, marginal utility, consumer choice, and the broader intuition that additional units of a good often provide smaller incremental benefits.

Figure C10: Final debrief prompt