



### How to Bring PBL to Life: Virtual Classroom

- Assign students a task to write in a notebook every time they come across a problem. This can be their “problem notebook” any problem big or small that they can think of goes in the notebook
- Bring in (virtually) 5-10 community stakeholders that can speak about specific problems they are having in their industry/community
- Set aside 2-5 minutes at the beginning or end of each class asking students to volunteer to share some of the ideas they wrote down.
  - Keep a running list of the ideas shared during class
- Once you have enough ideas, have the students vote on their favorites
  - Learn about these problems by engaging with experts in the field or by going on a virtual field experience
- Brainstorm solutions to those problems at the end of each class period
  - Keep a list of the winning ideas and the solutions students have proposed
- When the list of ideas and solutions is complete, have groups prototype and test their solutions using the Design Thinking process to see which ones are viable
- Share the application with your students and source their help to answer the questions

#### **Formula for creating a clear problem statement:**

- Start by explaining the problem and why it matters
  - Help students understand WHY they should care about this problem
- Describe what students are solving through the Problem statement/question

## Solve for Tomorrow



- Tell us how and who this problem impacts
- Propose a solution and explain the benefits of your solution

*Optional: back up your claims with accurate and factual statistics, or anecdotes.*

### Tools to use in a virtual classroom:

- Google docs/Hyperdocs
  - o Collaborative tools:
    - Jamboard
    - Easy Retro
    - Padlet
    - Menti
- PHET simulations
- Trello or SCRUM for project management
- Nepris
- Virtual field experiences
- Bringing in virtual experts into your classroom so students can learn from them
- TinkerCad