

# MUSICAL ENGINEERS

<b>GRADE</b> Pre-K - K	<b>FOCUS</b> STEAM	<b>CONTENT AREAS</b> ENGINEERING + MUSIC
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## STANDARDS

### K-2-ETS1-2.

Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

### MU:Cr2.1.PKa.

With substantial guidance, explore favorite musical ideas (such as movements, vocalizations, or instrumental accompaniments).

## ASSESSMENT

### RUBRIC



Instrument shows intentional design choices

Students explain how the instrument solves the problem



Instrument shows some design choices

Students explain how the instrument is created



Instrument shows little/no design choices

Students cannot explain their process for creation

## MATERIALS

- At least 30-50 recycled or broken instrument pieces (ie: old orff instruments, bell clappers, tissue rolls, bolts, clips, etc)
- Sketch paper and pencils.

## TEACHER NOTES

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### ENGAGEMENT

Provide an observation area with old musical instrument parts, pieces or recycled materials. Invite students to the observation carpet/table. Ask them to look through all of the objects. What do they see, feel, hear when they pick up each object?

### TRANSITION

Ask students what they think these items are from. Take as many ideas as they share. Then, explain that these items are actually broken instruments. Ask: what problem do we now have?

Share that engineers identify problems and then seek out new ways to solve that problem. Today, the students will each become a musical engineer.

Ask: Musical engineers, what could we possibly do with these items to solve the problem(s) we listed?

### ACTIVITY

1. Divide students into musical engineering teams. Each team will create a new instrument out of the materials found on the observation table. Each team can choose between 5-10 objects to create their instrument.
2. Each team should think about what sound they want the instrument to make and how it should be played. They can draw their ideas and then begin to build their instrument using their selected objects. They can ONLY use the objects found on the observation table.
3. Each team can test out their musical instrument to see if it matches what they were looking to create (how it sounds and how it should be played). If adjustments are needed, make them in this stage. Teacher can provide feedback to each team.
4. Teams present their finished instruments to the class and then all play their instruments together.

**INQUIRY FOCUS:** How do we make design decisions?