

# Using Manipulatives in a Virtual or Hybrid Space

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# Let Me Be Clear...

There are no experts in transitioning from face to face to online and/or hybrid learning during a global pandemic.

I don't presume to have this figured out.  
I want to learn together.

Connection is fundamental  
to engagement.

# Keep Students at the Forefront

With Any Manipulative,  
First and Foremost...

Let Them Play!

# Why Manipulatives?

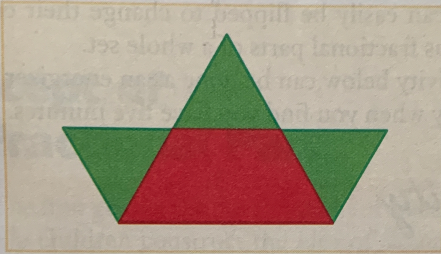
- Provide visual representation of deep mathematical ideas
- Allow for students to confirm their predictions or estimations
- Assist students in problem solving
- Encourage authentic collaboration among students
- Encourages students to be active in the process of learning (Hartshorn and Boren, 1990)

# Virtual Manipulatives

- Unlimited Supply (Lee and Chen 2015)
- Save time with distribution (Lee and Chen 2015)
- Simultaneously present figures and symbols (Lee and Chen 2015)
- Clean up is quick
- Can leverage technology to do things that physical manipulatives can not do (transparency, change between quantity and representation, etc.)

# Consider This Task...

**Activity 15.1**  
**Playground Fractions**



Create this “playground” with your pattern blocks. It is the whole. For each fraction below, find the pieces of the playground and draw it on your paper:

$\frac{1}{2}$ playground	$\frac{1}{3}$ playground
$1\frac{1}{2}$ playgrounds	$\frac{2}{3}$ playground
2 playgrounds	$\frac{4}{3}$ playground

Source: Adapted from Roddick, C., & and Silvas-Centeno, C. (2007). “Developing Understanding of Fractions Through Pattern Blocks and Fair Trade.” *Teaching Children Mathematics*, 14(3), 140–145.

(Van De Walle, Karp, & Bay-Williams, 2010)