

Activity 1: Fractions with Notes


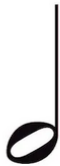



Materials needed: Fraction blocks and a pencil

BEFORE STARTING

Watch this video explaining how we divide with fraction tiles:



In music, we break notes down into a few different types:

Whole Note	Half Note	Quarter Note	Eighth Note	Sixteenth Note
				
1	1/2	1/4	1/8	1/16

By using our fraction tiles, we can see that there are two half notes in a whole note, two quarter notes in a half note, and two eighth notes in a quarter note (we do not have tiles for the sixteenth notes, but two of those go into an eighth note!).

Using the skills from this video and the knowledge of each of the notes, let's do some dividing!

$$\text{Half Note} \div \text{Quarter Note} = \underline{\quad} \quad \text{Whole Note} \div \text{Quarter Note} = \underline{\quad}$$

$$\text{Half Note} \div \text{Half Note} = \underline{\quad}$$

Let's try some problems without the notes!

$$\frac{3}{4} \div \frac{1}{8} = \underline{\quad}$$

$$\frac{1}{2} \div \frac{1}{5} = \underline{\quad}$$

$$\frac{3}{4} \div \frac{1}{12} = \underline{\quad}$$

$$\frac{1}{2} \div \frac{1}{6} = \underline{\quad}$$

$$\frac{2}{8} \div \frac{1}{12} = \underline{\quad}$$

$$\frac{1}{4} \div \frac{1}{3} = \underline{\quad}$$

If you are having trouble using the fraction tiles, watch this video and try this approach instead:



Activity 2: Quadratics in Sound

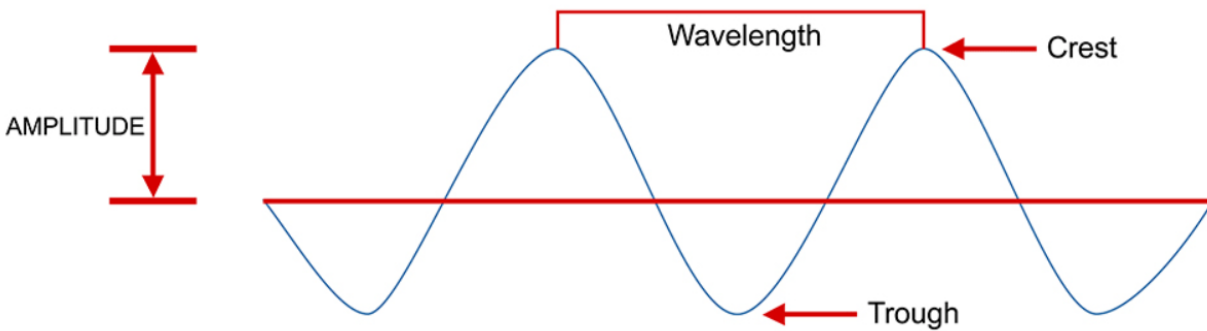
Materials needed: Pencil and calculator.

BEFORE STARTING

Check out this cool demonstration of sound wave:



Everything that we hear (music included!) comes to us in the form of soundwaves:



Don't they look extremely similar to the parabolas of a quadratic function? If we look hard enough, we can find all kinds of math around us! Go through and solve these quadratic problems to better understand how soundwaves work:

Determine the following from the given graph:

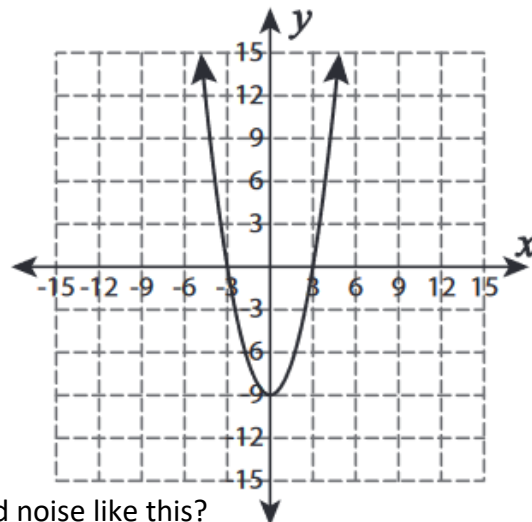
Zeros: _____

Vertex: _____

Positive or negative slope: _____

Domain: _____

Range: _____



What kind of sound would make a high-pitched, loud noise like this?

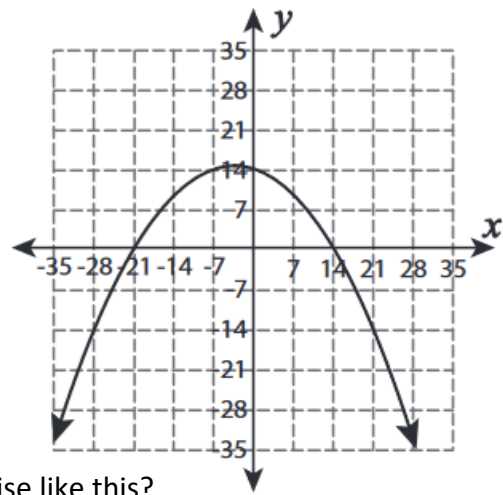
Zeros: _____

Vertex: _____

Positive or negative slope: _____

Domain: _____

Range: _____



What kind of sound would make a low-pitched, loud noise like this?

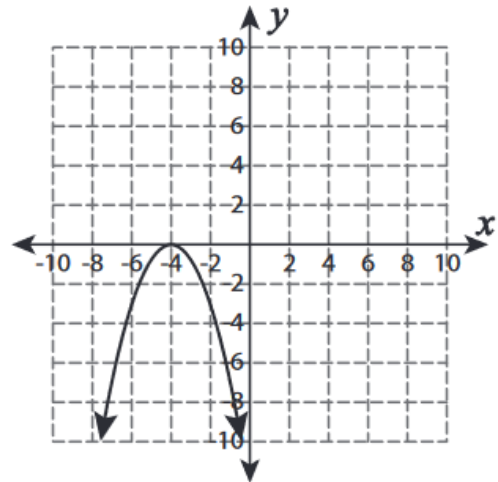
Zeros: _____

Vertex: _____

Positive or negative slope: _____

Domain: _____

Range: _____

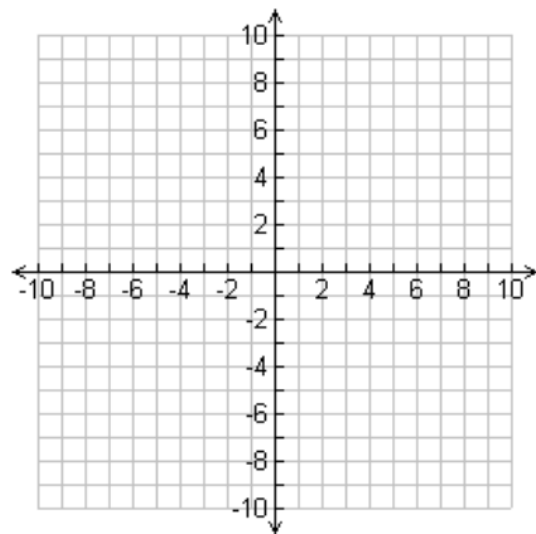
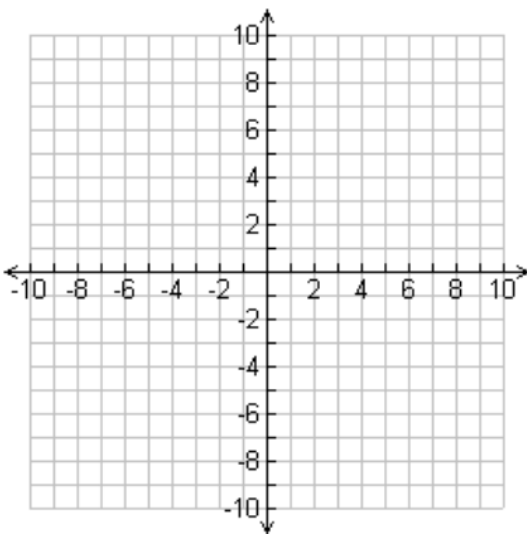


What kind of sound would make a quiet noise like this?

Can you make a parabola of a sound wave that is:

Quiet and deep

Loud and high pitched



Activity 3: There's Math in Those Lyrics!

Materials needed: A pencil and calculator (if needed)

We do not really realize it, but a lot of our music talks about math!

Using these song lyrics, answer each problem.

In their song "I'm Gonna Be," The Proclaimers sing "I would walk five hundred miles and I would walk five hundred more." If you walk at a pace of 3 miles per hour, how many days would it take you to walk that distance (round to the nearest tenth)?

Christina Perri sings "Darling don't be afraid I have loved you for a thousand years." How many minutes has Christina Perri loved her partner for?

Eddie Money sang about how he's got "two tickets to paradise." Eddie spent \$400 on each ticket (paradise is an expensive place to go nowadays). If Eddie only makes \$12.50 an hour at his job, how many hours did he have to work to get enough money for the tickets?

Justin Bieber talks about how he'd "spend ten thousand hours and ten thousand more oh, if that's what it takes to learn that sweet heart of yours." Is he really spending that much time to learn that heart? Use time conversions to prove your point.

Superfruit sings about someone that is "six feet tall and super strong." How tall would they be in centimeters? What about meters?

Harry Chapin sings about a driver "carrying thirty thousand pounds of bananas." How many grams of bananas is that? How many ounces?