The Hip Hop duo DobleFlo is trying to mix an electronic drum track with an instrumental sample, but the tempos don't match. To help them fix the track, calculate the tempo (speed) of the instrumental sample in BPM (Beats Per Minute).

1. Identify what you already know:
   - View the NEXT screen, "Find the Tempo of the Instrumental Sample."
   - How long is the sample?
     Length of sample (in seconds): ___8.889 seconds_______
   - Listen to the instrumental sample and count the total number of beats.
     Number of beats: _____16________________________

2. Plan it out. What is the problem you want to solve? How will you do it?
   [Students may restate mission. See below for possible strategies or "how."]

3. Solve your problem in the space below. Show all your steps and be sure to label (for example: seconds, beats).

   Possible Strategies:
   - Set up a proportion:
     Beats in the sample/length of sample = x beats per minute/60 seconds
     16 beats/8.889 seconds = x beats/60 seconds
     Solving the proportion for x should yield an answer of approximately 108 BPM.

   - Figure out the length of one beat, then divide 60 seconds by that length to determine how many beats in a minute:
     8.889 seconds/16 beats = 0.556 seconds per beat
     60 seconds per minute/0.556 seconds per beat = 108 BPM

   - Determine how many samples there are in one minute, then multiply by the number of beats in the sample:
     Divide 60 seconds by 8.889 = about 6.75 samples per minute.
     6.75 samples per minute x 16 beats per sample = 108 BPM.
4. Enter your answer on the screen and complete the interactive.

   • Number of beats per minute: ___108____________
     (Round your answer to the nearest whole beat.)

   • Listen to the sound of your mixed track. Do the tempos of the sample and the drum track match up? Explain why your plan did or didn’t work. [Student responses will vary depending on their strategy/solutions.]

5. How did you figure out your final solution? If you were going to email DobleFlo to explain your strategy, what would you tell them? [Student responses will vary depending on their strategy/solutions.]

6. If you had to find the tempo of a new instrumental sample, with a different number of beats (let’s say, \(b\) beats) and a different length (\(t\) seconds), explain what steps you would take.

   Possible Strategies:
   • Set up a proportion:
     Beats in the sample / length of sample = \(x\) beats per minute / 60 seconds
     OR \(b / t = x / 60\)
   • Figure out the length of one beat, then divide 60 seconds by that length to determine how many beats in a minute.
   • Determine how many samples there are in one minute, then multiply by the number of beats in the sample.