

## Info Sheet



### BREAK IT DOWN?

We are talking about breaking bigger problems into smaller problems, and then solving those smaller problems one by one. This type of thinking happens all the time in coding, and is a big part of learning to think like a programmer!



### THE BREAK IT DOWN VIDEO

The video uses a real-life 'problem' of baking a cake in order to demonstrate how to break something down. While this is a common activity that may seem to be simple, truthfully there are a lot of steps, tools, and methods needed to complete this task. Instead of trying to think about how to do everything at once, we break the problem down into smaller components and do them one by one!



(2:00) Baking a cake has been broken down into 4 main steps: 1) ingredients and tools 2) mix 3) bake 4) decorate. Now it seems easier to do!



(2:48) Even simple steps can present unseen challenges. For example, you can get ingredients from your kitchen, or the store. But who is going to pay for them?



### TAKE AWAYS:

- In coding, solving smaller problems one by one is often better than trying to solve one big problem!

## Activities

### Breaking Down a Task

Remind learners that breaking big problems and tasks down into smaller pieces will make them easier to complete! These activities will help learners get hands on with the idea of 'breaking things down' and also provide them with methods to do so again in the future.

Begin by telling learners that, "we are going to break down an important task today! I'm going to show you a tool to help us stay organized; and we can use it whenever we want to break it down!". Let learners know that their task is going to be cleaning your room! Then show learners the following table.

<b>STEP 1</b>	<b>TASK: CLEANING YOUR ROOM</b>			
<b>STEP 2</b>	<b>CATEGORIES</b>			
	Take out garbage	Change bed sheets	Pick up dirty clothes	Put away clean clothes
<b>STEP 3</b>	<b>STEPS</b>			

Show them that the task (or problem) they're working on should be written at the top. This goes in step 1. Then, ask learners what they should do next. If they're struggling, remind them that step 2 is about making smaller categories out of the main task. Show learners where the categories are written in the chart, and go over the examples provided.

Finally, have learners start step 3; creating the steps they need to accomplish for each category. Remind learners that as we create our steps we may run into new, smaller problems! As learners create the

steps for each category, have them add them under the appropriate one, in the right order. Now when they look back at this table, they can see how to accomplish their big task from the bottom up.

### Create your own!

The great thing about the table learners just used is that they can use it again and again to help them organize and break down many tasks! Have learners think of a task or problem that someone would need to break down into smaller chunks in order to complete it, just like baking a cake. Guide learners to think of a task they'd like to do! Once a task has been chosen, have learners use the table template and fill in: the task, each of the categories, and the steps needed for each of them.



## Song Lyrics

### Chorus Lyrics:

If you got a problem let's break it down!  
Got so many problems just break it down!  
Got a brand new challenge come on break it down!  
Lift your hands up and face the crowd!

A big problem is big, some might say large  
And if a problem is big you gotta take charge  
You might think 'How we gonna get this done'?  
Well just break the big problems into smaller ones