### ESSENTIAL QUESTION(S):
How can I generate a table given a growing pattern? What are ways I can model a context problem? What steps can I use to generate an equation? What are the characteristics of a geometric sequence?

### REVIEW:

<table>
<thead>
<tr>
<th>Date:</th>
</tr>
</thead>
</table>

### NOTES:

Maybe you’ve received an email like this before:

Hi! My name is Bill Weights, founder of Super Scooper Ice Cream. I am offering you a gift certificate for our signature “Super Bowl” (a $4.95 value) if you forward this letter to 10 people.

When you have finished sending this letter to 10 people, a screen will come up. It will be your Super Bowl gift certificate. Print that screen out and bring it to your local Super Scooper Ice Cream store. The server will bring you the most wonderful ice cream creation in the world—a Super Bowl with three yummy ice cream flavors and three toppings!

This is a sales promotion to get our name out to young people around the country. We believe this project can be a success, but only with your help. Thank you for your support.

Sincerely,

Bill Weights

Founder of Super Scooper Ice Cream

These chain emails rely on each person that receives the email to forward it on. Have you ever wondered how many people might receive the email if the chain remains unbroken? To figure this out, assume that it takes a day for the email to be opened, forwarded, and then received by the next person. On day 1, Bill Weights starts sending the email to 10 of his closest friends. Each of his 10 friends then forwards it on to 10 people so that on day 2 it is received by 100 people. The chain continues, unbroken, and is sent out at the same rate to each of the 100 peoples friends, and so on.

1. How many people will receive the email on day 7?
2. How many people will receive the email on day $n$? Explain your answers with as many representations [table, graph, explicit and recursive functions] as possible.

3. If Bill gives away a Super Bowl that costs $4.95 to every person that receives the email during the first week, how much money will his shop be out?