YAYYYY we get to learn about DNA now. This is my favorite part! I’m super bummed that I’m not there with you, but I’ll be back tomorrow and you’ll know a lot more stuff by then. Yay science. Answer these on your own sheet of paper please!

So, first, go ahead and watch this video: [Amoeba Sisters Video](https://www.youtube.com/watch?v=_POdWsii7AI)

1. Where is DNA found?
2. What are the building blocks of DNA?
3. Draw a picture of a nucleotide.
4. How do nucleotides pair together?
5. What part of the nucleotide codes for your traits?

Now, we’re going to look at the history of the discovery of DNA. A lot of credit is given to two guys, James Watson and Francis Crick, but they don’t deserve as much credit as many people would have you believe. Watch [this video](https://www.youtube.com/watch?v=59XnRgnkcB8) and answer the following questions.

1. What did Griffith do in his experiment?
2. What did Avery, MacLeod and McCarty figure out?
3. Chargaff’s rule shows that \_\_\_\_\_\_\_\_\_\_\_\_ pairs with thymine and \_\_\_\_\_\_\_\_\_\_\_\_\_ pairs with guanine. How did he figure that out?
4. Hershey and Chase’s experiment showed that \_\_\_\_\_\_\_\_\_\_\_\_\_ is the genetic material.
5. Rosalind Franklin took pictures of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that show that DNA is the shape of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. Maurice Wilkins shared the photo with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. Despite the fact that she was the one who took the picture, Rosalind Franklin was the \_\_\_\_\_\_\_\_\_\_\_\_\_ person to publish about DNA.

Now that you’ve learned a bit of history, let’s build a DNA molecule <http://learn.genetics.utah.edu/content/molecules/builddna/>. There isn’t an end to this model; if you keep pairing on and on for forever, you won’t finish.

1. How many hydrogen bonds pair A and T together, what about G and C?

Now, [take a tour of DNA](http://learn.genetics.utah.edu/content/molecules/dna/)

1. Where in the cell is DNA found?
2. DNA makes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Finally, we’ll come full-circle with the Amoeba Sisters and learn about how the body makes more DNA through [DNA Replication.](https://www.youtube.com/watch?v=5qSrmeiWsuc)

1. DNA Replication occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_ of eukaryotic cells during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the unzipping enzyme and it separates the complimentary strands of DNA.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the building enzyme. It replicates DNA molecules to build new DNA.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the primer. It helps polymerase figure out where to get started.
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the “gluer”. It glues DNA fragments together.
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ unwinds DNA at the origin. Then, \_\_\_\_\_\_\_\_\_\_\_\_\_ comes in to make RNA primers on both unzipped DNA strands.
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ polymerase comes in to add DNA bases, but it only works in the \_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_ direction.
8. RNA Primase has to set a lot of extra primers on the \_\_\_\_\_\_\_\_\_\_\_\_ strand.
9. The lagging strand has a bunch of little bits on DNA called \_\_\_\_\_\_\_\_\_\_\_\_\_ fragments.
10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ comes in and joins the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fragments.
11. Why is this type of replication called semi-conservative?