# MAKING Y@UR MARK **RUN YOUR OWN ChIP-SEQ EXPERIMENT**

### **HOW TO PLAY...**

Wrap the entire DNA sequence strip twice (clockwise) around each of the nucleosomes in turn, then cut the section which is wrapped around the **PINK** nucleosome – this is the accessible DNA.

This section, which we would isolate from the whole DNA sample using antibodies attached to magnetic beads, represents the section of DNA which is associated with a particular epigenetic modification. You can discover which gene is being transcribed by comparing the section of accessible DNA with the two sequences shown below.

5

Place the start of your DNA strip here and hold with a finger whilst wrapping the strip twice around nucleosome.





Section A

GCCTAG

2

3

TAGGCTAG

## WHAT IS CHIP-SEQ?

In Chromatin ImmunoPrecipitation Sequencing (ChIP-Seq) the DNA is broken apart and specialised proteins called antibodies are used to filter out particular epigenetic marks. The DNA wrapped around the marked histones is collected and we can then analyse these sections of DNA on a sequencing machine.

The machine reads the genetic code of A's, T's, G's and C's that each piece contains. We use the code to identify where each piece of DNA came from and the gene it is part of.







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