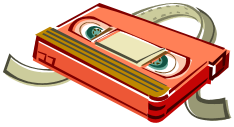


DNA as Videotape: Introductory Fact Sheet

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DNA is often called the "genetic blueprint" of an organism. But DNA is more like videotape than a blueprint.

Videotape is a tape--it's linear.

- It carries information.
- The information is encoded.
- The information has to be translated.
- We use a VCR and a TV to translate the information.
- The information produces sounds and pictures--scenes.
- We can make copies of a videotape.
- We can edit videotape--for example, we can take a scene from one movie and splice it electronically into a copy of a second movie.
- We can make copies of the edited tapes.
- Tapes of two different movies are composed of the same tape, but the information recorded in them is different.
- Tapes can come in different formats: for example, VHS and Beta.

DNA is a tape--it's linear.

- It carries information--genetic information.
- The information is encoded.
- The information has to be translated.
- Cells translate the information on DNA.
- The information on DNA makes traits.-- genes
- Cells can copy DNA.
- DNA can be edited--for example, we can take DNA containing one gene from an animal (for example, the gene for insulin from humans) and splice it biologically into the DNA of a bacterium.
- That bacterium can multiply, and its offspring will contain the insulin gene.
- Those bacteria can make the insulin protein.
- DNA from different organisms is chemically much the same format, (unlike videotape); so a gene from a bacterium can be inserted into and expressed in a plant or an animal.

As with all analogies, this one eventually breaks down. Only DNA copies itself and only cells grow; videotapes don't copy themselves and are not living organisms. But the analogy is useful because of all the other similarities between DNA and videotape.