

Appendix 2

An example of a timeline of teachers' edited digital video

Time	Video ¹
00:00-00:05	A photo of Agouti mice. Text (as a headline): "What do you see?" Text (under the photo): "What are the differences between them? Do they have the same DNA?"
00:05-00:27	A cartoon animation: twins with the same DNA. One of them looks suffering while the other one runs the marathon.
00:27-00:36	A slide: The word "Epigenetics" in big letters in the center of the slide. Beneath it, in smaller letters, a short explanation of this term: "Changes on the DNA, that influence gene expression. They may be influenced by genetics and way of life."
00:36-00:46	A schematic animation: A quick overview of DNA transcription and translation. Arrows were added with labels (in Hebrew): DNA, RNA, ribosome, proteins.
00:46-00:52	A schematic animation: Two DNA molecules, only one of them is highlighted (representing gene expression in the highlighted section).
00:52-01:03	A schematic animation: DNA with tags on it. The DNA is wrapped around a protein (histone).
01:03-01:40	A schematic animation: A tag with the letter "M" on a DNA. The DNA is wrapped tightly around the histone. Text in Hebrew: Gene transcription is repressed. Then the DNA is loosened. Finally, proteins are produced. Text in Hebrew: Gene can be expressed.
01:40-01:51	A realistic animation (from the Garvan institute): A dynamic DNA molecule with bright dots on it (representing methyl groups). Text in Hebrew: An example of an epigenetic mechanism - methylation. Arrows point to the methyl groups.
01:51-02:06	A realistic animation (from the Garvan institute): A double helix (DNA), the names of the nucleotides are written above it. Bright dots appear on the helix, and above the nucleotides (methylation pattern).
02:06-02:26	Text: "Do you remember the two mice?" A video: Two Agouti mice on scales – the light one is heavier than the dark one.
02:26-02:38	A simple static drawing of Agouti mice: a light one next to a DNA double helix, a dark one next to a double helix with methyl groups on it.
02:38-03:08	A slide with the assignment for the students.

¹ The entire digital video was narrated by the teachers (in Hebrew). The teachers wrote: "The narration throughout the video was recorded by us, in order to provide the right explanation (in Hebrew) for each part of the video. It also allowed us to produce a coherent sequence [*between the different parts*] that explains the term epigenetics, and to connect the term to a something concrete."