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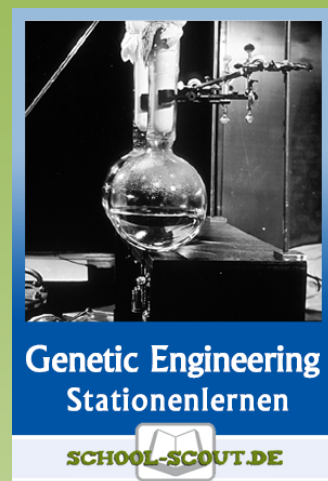
Unterrichtsmaterialien in digitaler und in gedruckter Form

## Auszug aus:

*Stationenlernen Science and Ethics: Genetic Engineering*

Das komplette Material finden Sie hier:

[School-Scout.de](http://School-Scout.de)





**Titel:**

*Stationenlernen Englisch Abitur*

**Science and Ethics: Genetic Engineering –  
Technological possibilities and ethical issues**

**Bestellnummer:**

**59236**

**Kurzvorstellung:**

- Dieses Stationenlernen zur Vorbereitung auf das Abitur befasst sich mit dem Thema „Science and Ethics“ am Beispiel der Gentechnik und ihrer Möglichkeiten. Die Schüler/innen erarbeiten das Thema selbstständig und können dabei auch eigene Interessenschwerpunkte erarbeiten.
- Die Arbeitsblätter bieten einen Einstieg in die Forschungs- und Anwendungsbereiche von Gentechnik und die dazugehörigen ethischen Fragestellungen: Darf man Genmais auf den Markt bringen, obwohl es der öffentlichen Meinung widerspricht? Kann Gentechnik zu Gunsten von Mensch, Tier und Umwelt eingesetzt werden? Und gelten für Literatur und Film die gleichen Maßstäbe?

**Inhaltsübersicht:**

- Didaktische Hinweise zum Einsatz dieses Materials
- Laufzettel zum Stationenlernen
- Überblick: Einsatzmöglichkeiten und Kompetenzen
- Einführender Informationszettel für die SuS
- Laufzettel
- 9 Stationen mit Arbeitsaufträgen und Materialien
- Lösungen und weiterführende Hinweise



Internet: <http://www.School-Scout.de>

E-Mail: [info@School-Scout.de](mailto:info@School-Scout.de)

## Stationspass zum Stationenlernen „Science and Ethics – Genetic Engineering“

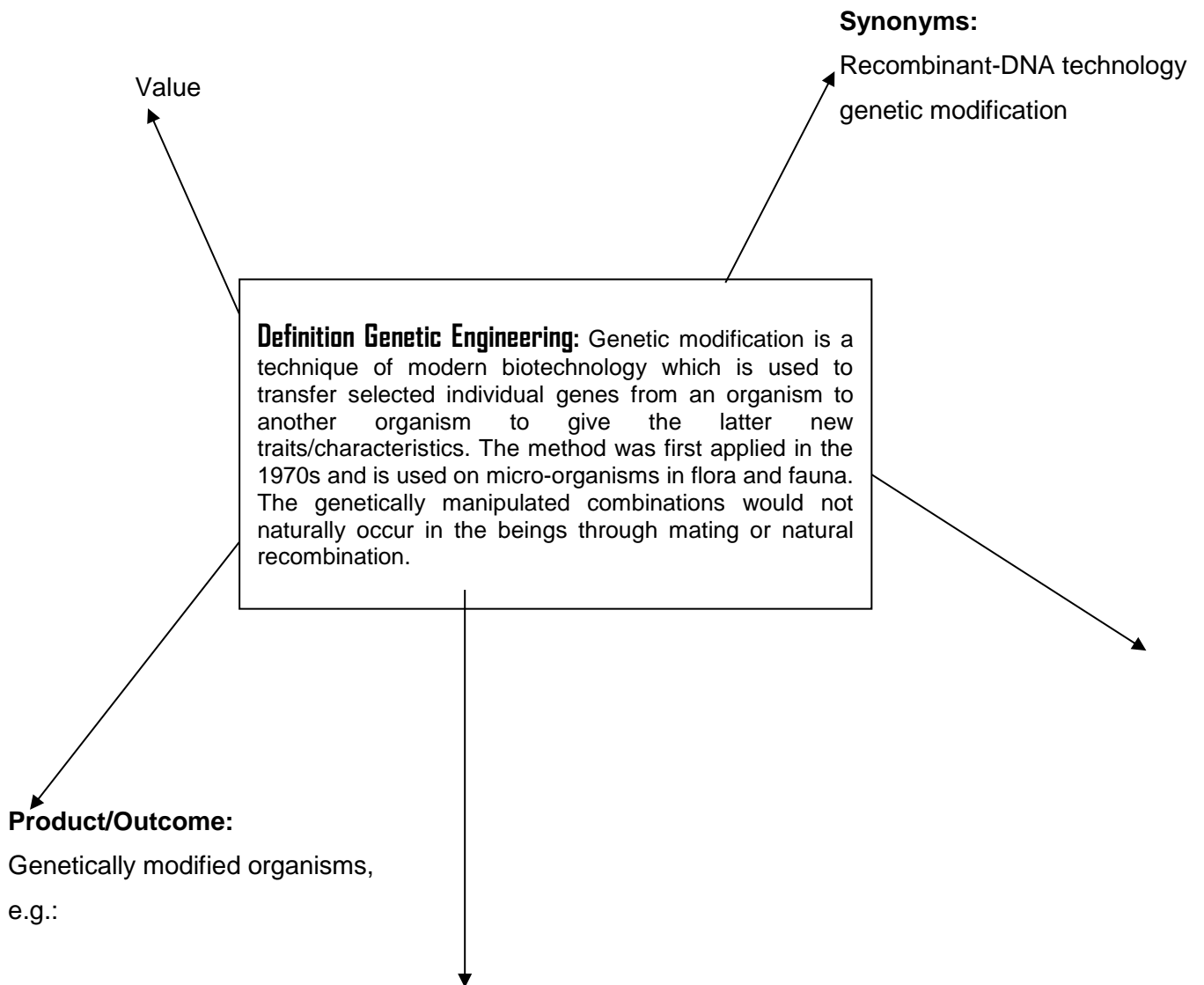
Station	Obligatory / Voluntary	Name of station	Done 😊 😐 😞	Corrected	Open questions
1	obligatory	Giant Apples – Genetic Engineering and Daily Life			
2	obligatory	Vocabulary Science, Ethics and Genetic Engineering			
3	voluntary	Think Tank "Science and Ethics"			
4	obligatory	I Had a Dream – Poll on Genetic Discrimination			
5	voluntary	Funfair "GENius – The Entertainment Potential of GMOs"			
6	obligatory	Sci-Fi Genetic engineering in literature, film and art			
7	obligatory	Ethical Criticism in art, literature and film dealing with genetic engineering			
8	voluntary	Ability versus Morality – Taking Sides			
9	obligatory	Help and/or Harm			

# Science and Ethics

## Genetic Engineering

### Station 1: Giant Apples – Genetic Engineering and Daily Life

What do you already know/think of genetic engineering? Read the definition below and add your thoughts to the mind map. (EA/PA)



Read about the main branches of genetic engineering and describe their value(s), potential risks and share any additional knowledge you have about the respective genetic science with a partner! (PA/GA)

The method of genetic modification is used to mass-produce vaccines, drugs which are injected into the human body for vaccination (inoculation of a person to make him/her immune against a specific disease). Genetically modified viruses are injected into the human body to encourage it to produce antibodies.

Values:

Potential risks:

Did you know?

Values:

Potential risks:

Did you know?

In vitro fertilization (IVF) is used to fertilize female ova (eggs) in petri dishes with a sperm if natural conception (in vivo) is not possible/very difficult. The fertilized egg is cultured in a petri dish for a few days and then transferred back to the woman's uterus to continue the pregnancy. IVF is often accompanied by stimulating either the woman's ovulatory process or the man's sperm production through genetic engineering.

Modified genes and other genetic material can be stored in bacteria at  $-80^{\circ}\text{C}$  almost indefinitely. The bacteria do not only function as storage room, but are relatively cheap, easy to multiply and clonal. Thus, bacteria hosting modified genes can be used to analyse the functions of specific genes and their interaction with others.

Values:

Potential risks:

Did you know?

Values:

Potential risks:

Did you know?

Genetically modified substances are developed to protect plants from cold, insects and also to make crops easier to harvest (shortening and strengthening of stems). Also cows and goats are genetically engineered to produce more protein in their milk to simplify cheese production. Genetically modified goats are used to grow drugs in their milk which are approved in the US since 2009. Fish are also genetically modified for aquaculture.

BioArt is a field of art which uses genetic modification to create aesthetic entertainment. For example, bacteria have been engineered to create black and white pictures, roses were genetically modified to produce blue petals and glowing fish were made.

Values:

Potential risks:

Did you know?



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