

Developed in 2013

Water solubility and bonds (Week 1)

<http://www.youtube.com/watch?v=2ZKOqSZnceM>

Diffusion across membranes (Week 2)

<http://www.youtube.com/watch?v=wxwA9rkOLS4>

Forms of energy in Biological Systems (Week 4)

<http://www.youtube.com/watch?v=iuVkdTCblsl>

Photosynthesis Intro (Week 5)

<http://www.youtube.com/watch?v=Cf02uSuRzT4>

Action Potentials (Week 8)

<https://www.youtube.com/watch?v=Nrei6w7CCNs>

Kidney Function and osmoregulation (Week 9-Kahn Academy)

Overview of kidney: <https://www.youtube.com/watch?v=cc8sUv2SuaY>

Secondary active transport in the kidney: <https://www.youtube.com/watch?v=czY5nyvZ7cU>

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Nutrient Absorption across the small intestine (Week 3)

<https://youtu.be/iemGQo8Sxcc>

[Associated worksheet](#)

Associated case study - [Gluten and Celiac Disease](#)

Updated case study (2015) - [Gluten and Celiac Disease](#)

- [NY Times article on Celiac's Disease](#)
- [America's Test Kitchen Video - A closer look at gluten](#)
- [US World and News Report article - Oats and the Perils of Gluten-Free Labeling \(2015 Cheerio's recall\)](#)
- [Research video - Eliminating the Gluten molecule - Elena Verdu at McMaster University](#)

Regulating Blood Glucose with Insulin (Week 6)

<http://youtu.be/hup7dvtS2dQ>

[Associated worksheet](#)

[Worksheet answer key \(2015\)](#)

Associated case study (2014) - [Developing pancreatic beta cells from stem cells *in vitro*](#)
(molecular focus)

Associated case study (2015) - [Gene therapy approach to treating Type I Diabetes](#) (molecular - organismal)

- Commentary on Gene Therapy article: OBrien (2013) DIABETES, VOL. 62, 1396-97
- [Treatment of Diabetes and Long-Term Survival after Insulin and Glucokinase Gene Therapy](#) Callejas et al. (2013) Diabetes, Vol. 62, 1718-1729.