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Titration

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This model is meant to represent what is going on during a titration at the particle level. During a titration you would begin with a sample of acid, done here by beginning with pressing the flag button and the [a] button on the keyboard. The acid particles are represented in yellow. In an acid base neutralization reaction, acid particles will be neutralized by base particles to form water and solid. In the model, by pressing the [b] button base particles represented in pink will become water and salt when they come in contact with acid particles, changing in color to blue and green for the water and salt respectively. In this way the model provides a visual representation for the titration process, including the buffer regions, the equivalence point and the endpoint.

This model is most obviously related to chemistry, but physics is involved because it involves collisions and temperature. Biology contains analogous content through the cancer related content, since chemotherapy is essentially a type of titration, albeit with medicine rather than an aqueous base. Earth Science is trickier, but is related through the weathering processes that are commonplace in earth science, since they obey similar functions. Finally in mathematics, the sorts of functions involved include logarithms, and the endpoint can be calculated and predicted using the second derivative of the function.