**What is being learned? What mathematics is the focus of the activity/technology? Is relational or instrumental understanding emphasized?**

Students will be able to visualize the different parts of the formal definition of a limit, something that is quite difficult for most high school calculus students to understand. The technology allows the teacher to change the values of epsilon which results in a corresponding change in the graph and the delta values. The demo emphasizes a relational understanding between the different variables in the formal definition.

**How does learning take place? What are the underlying assumptions (explicit or implicit) about the nature of learning?**

Learning takes place by connecting the visual to the written statement in most textbooks. The Wolfram Demonstrations Project assumes that linking a visual presentation to the verbal presentation will help students understand both.

**What role does technology play? What advantages or disadvantages does the technology hold for this role? What unique contribution does the technology make in facilitating learning?**

The applet provides us with a visualization of a complex mathematical idea. The demo, by itself, does little to link the visual to the standard statement, but used in class, with a teacher explaining it, it makes an otherwise difficult concept easier to understand. What makes this better than most pictures a teacher can draw is its dynamic nature.

**How does it fit within existing school curriculum? (e.g., is it intended to supplement or supplant existing curriculum? Is it intended to enhance the learning of something already central to the curriculum or some new set of understandings or competencies?)**

The Finite Limit demo is intended to supplement a discussion of limits and their formal definition, which is the basis of calculus. Students can understand derivatives and integrals without the formality, but they will not be able to understand any later proofs involving limits.

**How does the technology fit or interact with the social context of learning? (e.g., Are computers used by individuals or groups? Does the technology/activity support collaboration or individual work? What sorts of interaction does the technology facilitate or hinder?)**

It is best to project the applet so that everyone can see it at once, and use it as a discussion tool. Students looking at the applet on their own computers are not likely to make the specific connections between what they are seeing and the different parts of the formalized statement in their textbook. They may see what delta and epsilon are, but they are unlikely to see how the inequalities connect to the visual.

**How are important differences among learners taken into account?**

The demo provides visual support to a statement heavy with technical notation. There is little other support provided for other types of learners.

**What do teachers and learners need to know? What demands are placed on teachers and other "users"? What knowledge is needed? What knowledge supports does the innovation provide (e.g., skills in using particular kinds of technology)?**

Students and teachers need to have an understanding of what a limit is, and to have been introduced to the formal definition of a limit. The technology has no demands beyond navigating to the website. If teachers have some skill in embedding tools on their websites, the Wolfram Demonstration Project does provide a way for them to do so. If a teacher or student were interested in creating their own demos, they would need access to Mathematica and knowledge of its code.