

Getting a computer to recognize objects in images has proven a major stumbling block for computer vision. But researchers at Carnegie Mellon University hope to accelerate this work by enlisting the unwitting aid of thousands of Internet users through a game they call:

# PEEK BOOM

## Why play?

The two-player game requires one player to sequentially reveal parts of an image so that a second player can correctly guess a word that describes some aspect of the image.

In so doing, the players will generate labeled images that can be used to train computers to see.

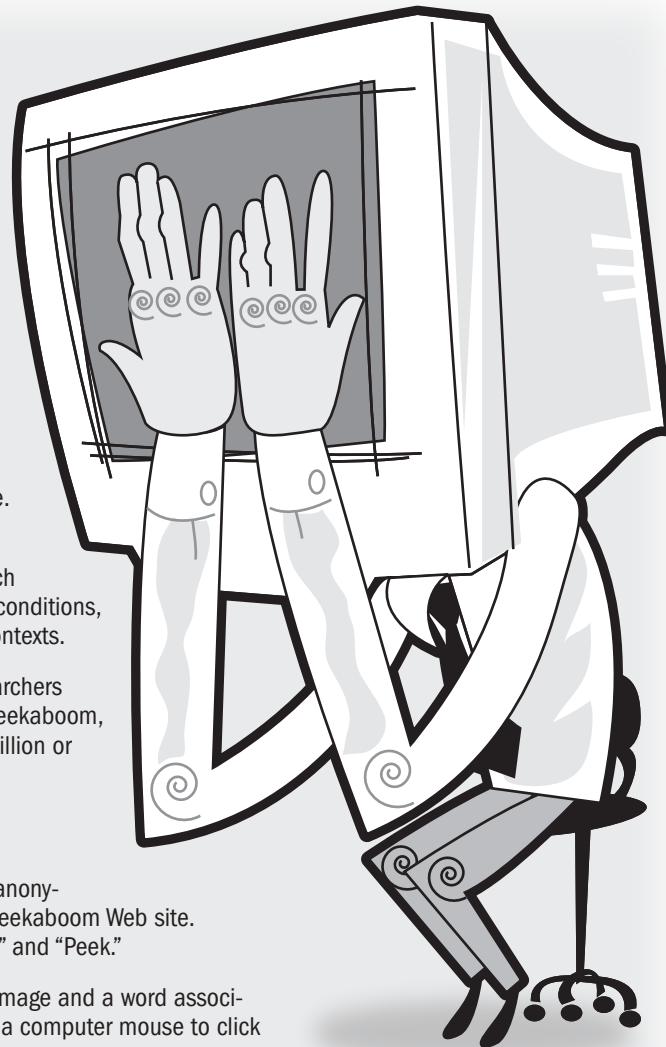
Vision training is accomplished by showing a computer many images that include an object, such as a car or an elephant, shown in varying lighting conditions, from various perspectives and in many different contexts.

But labeling these images is laborious; most researchers have access to only a few hundred or thousand. Peekaboom, if it proves popular, potentially could generate a million or more in a matter of months.

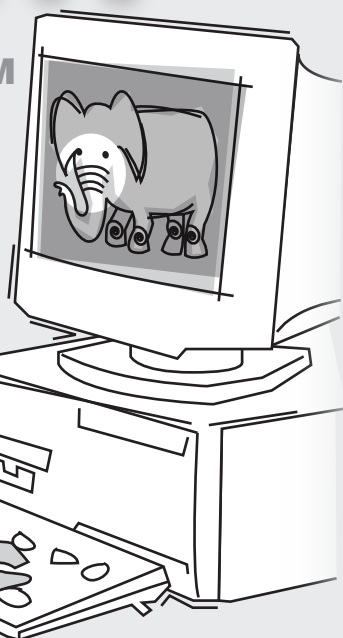
## The basics

Two players are randomly and anonymously matched through the Peekaboom Web site. They then take turns as "Boom" and "Peek."

As Boom, a player is given an image and a word associated with that image. By using a computer mouse to click on the relevant portions of the image, Boom reveals those portions to his counterpart, Peek, in such a way that Peek can guess the associated word. Each time Peek is successful, or when both players agree to give up on a difficult image or word, the players switch roles and play resumes. Each session lasts four minutes.



BOOM

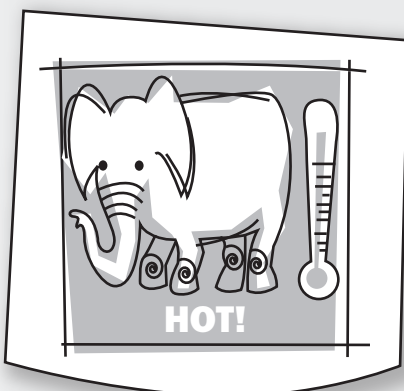


PEEK

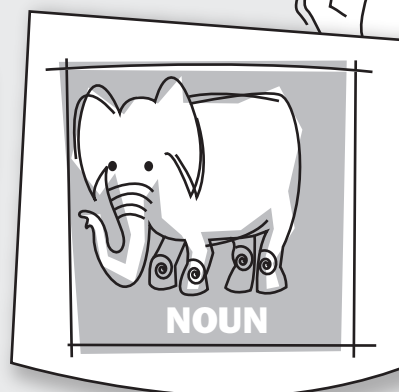
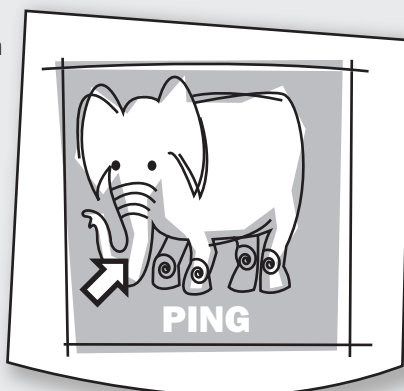


## Hints

In addition to revealing portions of the image, Boom can provide other help to Peek (both receive points when Peek is successful).



Boom also can "ping," or point to, an area of the image. This can be helpful when the object the word describes is not obvious without more context. If Boom wants Peek to identify the trunk of an elephant, for instance, showing only the trunk can be confusing, but showing the entire elephant could fail to elicit the word "trunk." So Boom might choose to show the entire animal and then "ping" the trunk.



Boom can also let Peek know if the word in question is a noun, is a noun related to the image, is a verb or is included in text within the image.

## More about Peekaboom

Peekaboom is free. It's still a new game, however, so its developers are still working out the kinks. To play, visit [www.peekaboom.org](http://www.peekaboom.org).

Boom, for instance, can see all of Peek's guesses and can indicate if Peek is "hot" or "cold."