



## Design and designing

### *Sketching complex objects*

Activity Eighteen is called sketching complex objects and the complex object I've chosen to represent is this child's toy. It's not so complicated that it makes it very difficult to draw but it does give me a chance to represent much of the things we've looked at - the crating, the ovals, the use of outlining and perspective. So where do you start with an object like this? Well we decide what sort of view we're going to produce first of all and if you remember back to some of the previous activities, it was up to us what sort of box we started with. There's the Y shape I started with. Well I could represent it in a very different way, I could represent it like this, where I saw much more of that top surface. The way I draw it is entirely up to me as the graphic designer of this particular image. So having thought about it, I've decided that I particularly want to see the top and the side, I like the wheels very much but I want to be able to see this front surface as well. So I need to produce a crate which envelops the entire object. Now it might be that I chose to spend some time measuring this object to get it exactly understood. For the purpose of this sketch activity I'm just going to go straight in and produce a shape like that which more or less envelops the whole of the object. Clearly this is wasted space up here but let's see how that unfolds. I know that the object has a thinner front than the back so I need to begin to put in some of this shape over here and I'm beginning to construct now the front nose of the tractor and I'm using my crate guidelines to help me construct the basic shapes that appear in this tractor form. The roof is going to come over something like that, it's going to come about there so ... and the wheel is going to be about there. Let's put in one of the wheels. Now remember the principle of drawing one of these ovals was to find the axes and I'll put this in as a construction line there and at 90° to it I put in a line which will be the major axis and I'm going to use that to help me construct a line like that. Now that's a representation using an oval that represents the circle of the wheel and I'll do the same for the front wheel. Let's see how that would look - I have a look at this and can see it is just beneath the underside there, it seems to go through a little sort of plastic housing there. I draw in the axle, I draw a line 90° to it and I allow that to become the guidelines for me ellipse, my oval. So I can now project those lines out and draw another oval because I want the wheel to have some thickness. And the same for the front wheel, join that up to there, let's put some of those lines in so you can see what it is and we can begin to continue with this now. It looks like my original crate was a little bit ambitious at the back there, not a problem because I'm just going to foreshorten that a little bit and obviously I've got my funnel coming out of here, and how are we doing for that? We need to put in some back wheels, sorry, some wheels at the rear of that, I can't quite see the other one and those little headlight things on here. I'm not going to put too much detail into this sketch, this after all is a first sketch that I can now use as an underlay using that overlay technique.

So now we've got the sketch of our child's toy which is a plausible starting point but it has used many of the techniques that we have developed in this modelling workbook. The idea of crating to help us establish a perspective, the use of guidelines to help us get accurate ovals for things like wheels, the use of shading to give three dimensional form to an object. If you can end up with rough sketches like these then they are going to be really valuable to you, not only in communicating design ideas amongst other designers and showing them to other people but the act of visualising them can improve your own creativity. So these are the techniques that you need to practice to be able to use sketching effectively in design.