

creative little SCIENTISTS

UKEN_Int_EggCarrier_CrossCurr

Teacher Education Design Principle + code:	16. Teacher education should provide teachers with knowledge of approaches to timetabling and organizing cross-curricular project work. TE: CrossCurr
Specific Teacher Outcome(s):	16.1 Teacher should be able to use approaches to cross-thematic, cross-curricular and project work to promote creativity in science and mathematics. 16.3 Teachers should be able to build connections across the curriculum of various kinds and with potential to contribute to children's inquiry and creativity.
Factors linked with:	P: Affect; M: Cr.
Type of material (image – interview (int) – classroom extract (class):	Interview
Originating from:	
Country report :	D4.3 UK (England)
Case:	Case 13
Episode:	Egg Carrier
Teacher:	Ella
Age Group:	6-7
Selected episode present in D4.4 Appendix	No



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Using a cross-curricular project to promote inquiry and creativity

The unit the class was working on was 'From A to B, Travel and Transport'. As part of this unit the children had travelled around London to see as many different modes of transport as possible: overground train, DLR train, underground train, cable car, boat, bus, airplane and helicopters. They had made a display of their travels in the classroom as shown below.



The Transport Project display

The content of this episode focuses on an activity where the children had to design and make an egg carrier to transport a fresh egg safely when dropped from a height. The children were expected to draw on their observations of modern modes of transport as well as studying the structure of the Wright brothers' first airplane and so make connections with their prior learning. The teacher did not rely on the school's scheme for this activity. She had adapted it for the adults to step back to enable the children to learn by trial and error.

Ella: 'I think it's nice to say 'Right, here are your resources, go and experiment' and allow them to use their creativity and their knowledge, previous learning to, sort of, come up with what they want. ... if they have got a solid foundation from previous lessons, we've had a whole topic around it [*transport*], I think they had the knowledge there to be able to go and use their creativity and imagination to create fantastic egg carriers, and it worked.'

The resources set out on the tables provided a rich source of materials for the children to choose from: cardboard boxes (various sizes), plastic bottles (various sizes), straws, string, balloons, various fabrics, plastic shopping bags, rulers, scissors, sticky tape and glue. The children worked individually and could also make connections with a previous topic on Materials as they knew the properties of some of the materials.



Resources for the Egg Carrier



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Reflecting on findings and their applications Making real life connections

Jameel designed an egg carrier with a hole stuffed with tissue paper, when asked by the researcher what the tissue paper was for he replied: *So we don't break it.* He joined two plastic straws together with some masking tape, as shown in the photograph below, to make wings. Jameel planned the design of his structure using prior learning:

Researcher: How did you know to use straws to make wings?

Jameel: In Brown class [Year 1 last year] we did an experiment to see which material was best.



Jameel's Winged Egg Carrier

Ella noted how Jameel's design seemed to have based his carrier on the Wright brothers' aeroplane and indeed the structure of the wings was similar to a photograph of the airplane on the classroom display.

Ella described how Jameel:

'... was very creative He very quickly realised he had to cut a hole out of his coke bottle for the egg. He knew he wanted to do an aeroplane so very cleverly; he came up with his own way of making the wings. [...] I think that shows real creativity. He didn't cut out a piece of cardboard like most of the children did. He thought about the structure of the aeroplane. We'd looked a lot about the Wright Brothers with their first aeroplane and you can see he has almost copied their ideas of the wings.'

Ella had planned for the children to draw on previous experiences and make connections with the transport topic and Jameel's design is clearly linked.

Another child designed a structure based on a hot balloon.

Researcher: So when you were choosing your materials to make your carrier, what made you choose particular things?

Tolga: My brain

Researcher: What did your brain tell you to do?

Tolga: It told us to get a balloon and tie it on to a bottle.

Heri: [inaudible]



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Researcher: Why did you choose a balloon?

Tolga: I was trying to make a hot air balloon.

Researcher: So when your brain was telling you to choose the balloon, why was your brain telling you that a balloon would help stop the egg crack?

Tolga: Like it would make it slow until the egg. The air would go by the side of the balloon.

Researcher: What happened to your egg?

Tolga: It didn't break.



Tolga's Hot Air Balloon design

In discussion with the researcher, the children also highlighted the motivating context by the need to protect the egg and the opportunity to do something new and for themselves.

Researcher: So how did you sort out your choices by yourself? Did you talk to other children? Or other adults?

Tolga: I just used ... My only partner was my head and my brain.

Heri: I just did the same thing as that.

Int: Would you say this lesson was using your creativity?

Tolga & Heri: Yes.

Researcher: What does creativity mean to you?

Tolga: Creativity means like .. that .. that you are creating something...

Heri: ... that you've never created before.

Tolga: Exactly.

Researcher: So what was new to you in this lesson?

Tolga: The new thing about it was how the eggs don't break. I'd never done an invention like this

Researcher: You've never done a lesson like that? What was different about this lesson?

Heri: The eggs.

Tolga: Exactly, there was eggs involved and messy stuff.



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