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|  | **Swavesey Village College****Lesson Planning Form****2010-11**  |
| **Staff**Tabitha George | **Class**8SZ | **Date**Thurs 17th Mar. | **Period**5 |  |
| **Course and lesson context**A revision and extension lesson on Volume prior to Yr 8 assessments taking place next week.This is a lower, mixed ability group with levels ranging from 3 – 6. They struggled with the concept of calculating volume in the Autumn term when covered with area and perimeter. This lesson intends prioritise the concept of volume as the basis of their understanding, leading onto formal calculation when and where appropriate.  |
| **Learning Objectives** (Use **HOTS** to show progression through the lesson)1.  **Apply** and **extend** ideas of perimeter and area to understand volume as a 3D measure of size 2.  **Create** a box with the greatest volume for a given piece of paper 3.  **Justify** conclusions drawn using more than one argument or explanation to **convince** other learners |
| **Learning Outcomes (**What the students will do to show what they have learnt], refer to different groups of learners)1.  **Everyone** will... understand that volume is a measure of how much a 3D solid can hold2.  **Most** will... understand that volume is dependent on all three dimensions and that a taller box will not always have the larger volume 3.  **Some** will... calculate the volume of their boxes and use this to back up conclusions drawn  |
| SEN Students4 – SA3 – SA+ | FSM (Check on E portal)2 (Ricky and Lisa) | Looked After Children (Check with EAK)N/A | Seating Plan should be available showing Targets, G&T/FSM/SEN/LAC /EAL information |
| **Learning and Teaching Activities** Starter/Settler/Hook “Which is the biggest box?”Cereal boxes laid out at back of room – students are directed to look at these before sitting down and completing their choice on the slip of paper provided. They must give a reason for their choice. (5mins) Discussion of two example answers – what’s the mistake? Leading on to discussion of what I meant when I asked which box was “biggest”. Concept of volume as a measure of overall “size” of the box – how much it will hold.  |
| **Lesson Structure showing development activities**1. Open-topped boxes created using 20cm x 20cm squares of paper. Do all our boxes look the same? What’s the same / different about them? Do all the boxes hold the same amount? (How do you know?)

(10 mins)2.  Question: **“Will the box hold the same amount, whatever the size of the small squares I cut out?”**Students try to answer this question in small groups. They have access to paper, scissors, glue etc. A support sheet will be provided – one per team, to guide the investigation if needed.1. mins)
2. Bring whole class together – targeted questioning aimed at key groups and students (dependent upon progress with task as assessed during the work time).

Q1: What have your group been trying out?Q2: Describe / show us an example of your biggest boxQ3: Do you agree that this is the biggest box? How does it compare with your ideas / boxes?Q4: **How can you really convince me which box will hold the most?** Introduction of a new resource – a weighing station at the front. Students are invited one group at a time to use the weighing station however they see fit. Groups will also be continuing to investigate the initial problem, building up a convincing case for which box has the largest volume. 1. Bring whole class together

Q1: Did your group choose to use the weighing station? If so, why and how did you use it?Q2: At the start of the lesson we said that the cereal box with 850g might not actually have the largest volume. So why would we want to use the weighing station?Q3: Is the box you showed us earlier still your largest box? Why? **Group questions (10mins)****Q4: What is the smallest possible box we could create?** **Q5: If I gave you a different starting piece of paper could you find the largest box more quickly, using what you’ve discovered already?**  |
| **Plenary** (Restate Learning Objectives, use questioning techniques to target groups of learners)Groups invited to present their conclusions in relation to the learning objectives (are they convinced they have produced the box with the greatest volume). Peer assessment of quality of conclusions presented – how convinced are you? Did they use more than one way to justify their findings?If time then relate conclusions back to two numerical problems on board.  |
| How are these objectives assessed? (Refer to any AfL strategies used) Including questioning, peer and self assessment and any oral or written feedbackStarter: Targeted questioning Main: Teacher circulation during work and targeted questioning as highlighted in activity descriptions. Peer assessment: At checkpoints in lesson activities students will be questioned and guided to comment on each other’s answers. Peer assessment: Plenary activity allowing groups to compare arguments and suggest strengths / weaknesses. Written feedback: Work produced by the group – on the piece of paper and boxes /models produced.  | Links to Home Learning?Revision prior to assessment! | How will the TA support student progress?N/A |

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| Tick against different Learning Styleskinaesthetic Kinaestheticear 3Auditoryhm00373_ VisualAre there opportunities for: Individual work Paired work Group work Whole class work |
| Personal Checklist PACE PRAISE PROGRESSION* Are the Learning Objectives challenging and displayed, shared and reviewed?
* Are students engaged and enthusiastic?
* Is there suitable pace to the lesson?
* How will Curriculum Credits be awarded?
* Are there high expectations for all?
* Do students know their current level and how to improve?
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