**Reasoning and Problem Solving – Multiply by 9**



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| 1.Lois makes an array with counters to represent the calculation 3 x 9 = 27.    She adds extra counters to show how she would calculate 4 x 9.  Macintosh HD:private:var:folders:5k:54k53_tn2wl58mfv0m4nnflm0000gn:T:TemporaryItems:Screenshot 2020-06-30 at 20.34.24.png  Find and correct her mistake. | 2. Liam makes an array with counters to represent the calculation 2 x 9 = 18.    He removes some counters to show how he would represent 1 x 9 = 9.  Macintosh HD:private:var:folders:5k:54k53_tn2wl58mfv0m4nnflm0000gn:T:TemporaryItems:Screenshot 2020-06-30 at 20.36.08.png  Find and correct his mistake. |
| 3. Sue is filling boxes with buns. She can put 9 buns in each box and each box is full. Macintosh HD:private:var:folders:5k:54k53_tn2wl58mfv0m4nnflm0000gn:T:TemporaryItems:Screenshot 2020-06-30 at 20.37.18.png  Sue has between 50 and 75 buns. How many **boxes might she need?** | 4. Josh is packing crates with bottles of pop. He can put 9 bottles in each crateMacintosh HD:private:var:folders:5k:54k53_tn2wl58mfv0m4nnflm0000gn:T:TemporaryItems:Screenshot 2020-06-30 at 20.38.50.png and each crate is full.  Josh has used between 9 and 12 crates. How many bottles might he have packed? |
| 5. Lexi and Dylan are comparing how many stickers they each have. Stickers are kept in packs of 6.Macintosh HD:private:var:folders:5k:54k53_tn2wl58mfv0m4nnflm0000gn:T:TemporaryItems:Screenshot 2020-06-30 at 20.39.42.png  Lexi says,  Is she correct? Prove it. | Harry and Maisie are sharing out some strawberries for their class. There are 9 strawberries in each bowl. Macintosh HD:private:var:folders:5k:54k53_tn2wl58mfv0m4nnflm0000gn:T:TemporaryItems:Screenshot 2020-06-30 at 20.41.35.pngHarry says,  Is he correct? Prove it.  I have shared out more strawberries than Maisie because she has only prepared 3 bowls. I have shared 36 strawberries. |
| 7.Hassan says,  Macintosh HD:private:var:folders:5k:54k53_tn2wl58mfv0m4nnflm0000gn:T:TemporaryItems:Screenshot 2020-06-30 at 20.42.48.png | 8.Jim and Kat are sharing game cards with their friends at their after-school club. There are 9 game cards in each pack.  **Macintosh HD:private:var:folders:5k:54k53_tn2wl58mfv0m4nnflm0000gn:T:TemporaryItems:Screenshot 2020-06-30 at 20.45.23.png** |

**Answers**

1. **Lois has added 3 counters which represents 10 lots of 3. She needs to add another row of 9 counters to represent 4 x 9 to represent the answer of 36.**

2. **Liam has removed the correct number of counters but he has arranged them to represent 3 x 3 = 9. He needs one row of 9 counters to represent 1 x 9 = 9.**

3. **Sue could have 54, 63 or 72 buns. She might need 6 (54 ÷ 9 = 6), 7 (63 ÷ 9 = 7) or 8 (72 ÷ 9 = 8) boxes.**

4. **Josh could have used 9, 10, 11 or 12 crates. He might have packed 81 (9 x 9 = 81);90(10x9=90);99(11x9=99)or108 (12 x 9 = 108) bottles of pop.**

5. **Lexi is correct because she has 6 packs. 6 x 9 = 54 stickers. Dylan has 63 stickers, so he has more.**

6. **Harry is correct because he has shared out 36 strawberries. 36 ÷ 9 = 4 bowls. Maisie has prepared 3 bowls which is fewer than Harry’s 4 bowls.**

**7. Hassan’s calculation would be: 6 x 9 = 54 and 3 x 9 = 27 54 + 27 = 81 or 6 + 3 = 9 x 9 = 81 which is not equal to 10 x 9 = 90.**

8. J**im is correct because Kat has given out 6 packs. 54 ÷ 9 = 6. Jim has given out 7 packs which is more than Kat.**