WORLD CUP POINTS PUZZLES

WORLD CUP POINTS PUZZLES are ideas of puzzles for your students. Students could complete the sheets, as is. Or, of course, you could present these puzzles to your students in another way. You could, for example, tackle them as a group, introduced in a different way by the teacher.

Either way, **the earlier questions in this set of puzzles help the support the later ones.** So, it makes sense to do the maths in that order.

There isn't much context/motivation provided on the first page of questions, but the thinking required will help students with the second page – where they are exploring **how the number of points needed for progression to the knock-out stages, has changed for 2026** (because of the new tournament structure for 2026).

The hook you can use to provide motivation for the whole activity is: *'How much easier is it to progress to the knock-out stages in 2026?'*

GROUP RESULTS is a support document that could be printed for question 4 onwards. The 'warm up puzzle' will help students get used to how the diagram works. You may also need to model how to use the structure to help with the World Cup Points Puzzles puzzles.

SOLUTIONS AND TIPS BELOW:

1) How many games are played in total in group A?

6 games are played.

Students could write out all the games systematically.

Or they could do a calculation. They could realise there are 4 ways of choosing the first team playing, and 3 ways of choosing the second. Which leads them to 4 multiplied by 3 (=12). But they then need to realise that those 12 games would include every game twice (ie A v B, *and* B v A – where both of those are the same thing). So, we must divide 12 by 2, giving us 6.

Or for older students, 4 choose 2 = 6.

2) Write out all the possible total points that a team could get in the group stages.
Eg WWW = 9 point
LLL = 0 points

Students can work systematically.

WWW = 9
WWD = 7
WWL = 6
WDD = 5
WLD = 4
WLL = 3
DDD = 3
DDL = 2
DLL = 1
LLL = 0

It's important students recognise that for this the order the letters are written in doesn't matter.

ie WWD is the same as WDW.

It's nice to note there is no way of getting 8 points, and two different ways of achieving 3 points.

3) Can two teams in the same group both get 9 points (from three wins)?

No. If one team wins all three matches, every other team lose against that team, so those teams therefore cannot get three wins themselves (they must loose at least one).

Can two teams in the same group get 0 points (from three losses)?

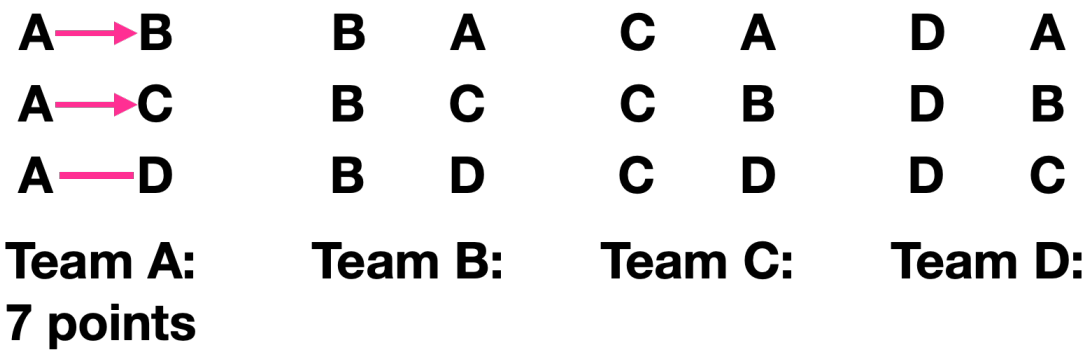
No. If one team loses all three matches, every other team wins against that team, so those teams therefore cannot get three losses themselves (they must win at least one).

4) ***Can two teams in the same group both get 7 points? What's the maximum number of teams in one group that can all achieve 7 points?***

To think about this (and subsequent questions) systematically, we've used the structure below.

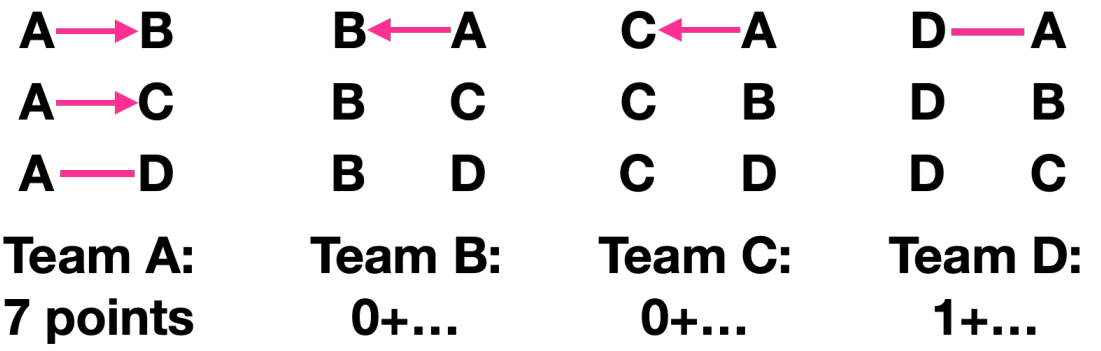
You could print out the **support document 'Group Results',** to provide your students with this structure. You will need to model to your students how to use the structure as we have done for this question below.

We start by imagining team A get 7 points, and creating (by adding the arrows and lines in pink) a set of three results in the first block that achieves this. See below.



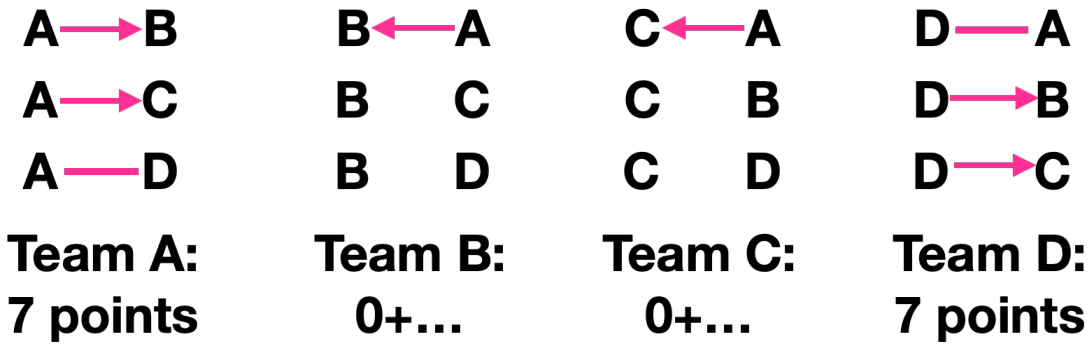
The arrow here denotes that team A beat team B, and the straight line denotes that team A drew with team D.

We then need to fill in these matches from the point of view of team As opponents. As below.



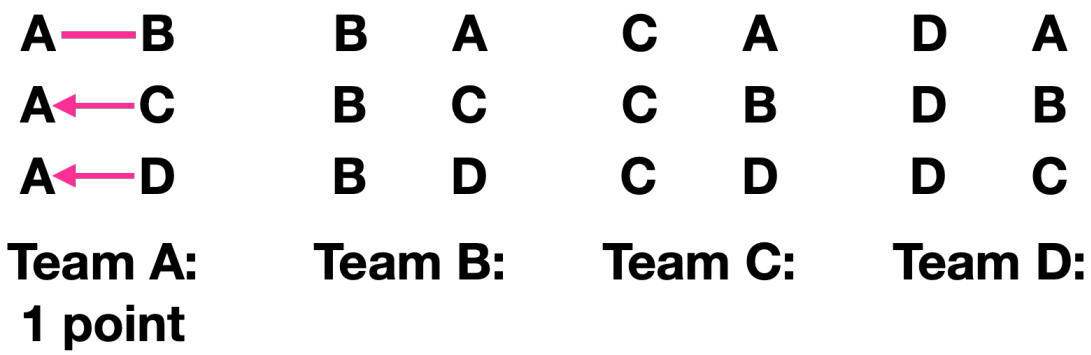
Now we want to try to make a second team get 7 points. We realise that it is not possible for team B or C to get 7 points, as the maximum they can get from their two remaining games is 6.

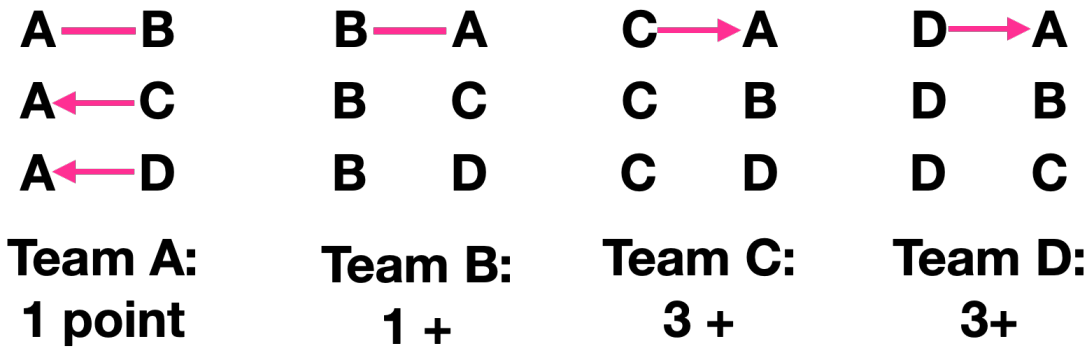
But it is possible for team D to get 7 points, as below.



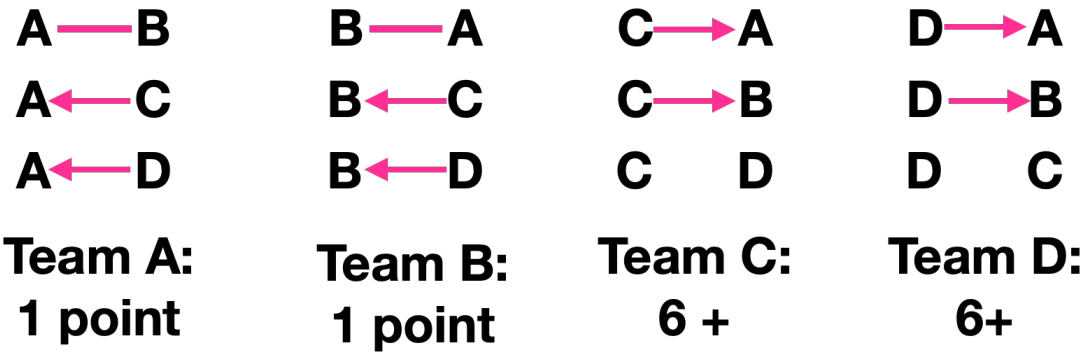
TWO IS THE MAXIMUM NUMBER of teams from the same group who can get 7 points.

5) Can two teams in the same group both get 1 point? What's the maximum number of teams in one group that can all achieve 1 point?





We can see Team C and D must get at least 3 points. But it's possible, as below, for Team B to also get 1 point.



TWO IS THE MAXIMUM NUMBER of teams from the same group who can get 1 point.

6) In 2026, what is the lowest number of points a team can get and still progress to the knock-out stages?

1 POINT.

As we saw in earlier questions, only one team can get 0 points (so only fourth place can get 0 points).

So, let's consider if third place could get 1 point.

If fourth place do get 0 points, third place must get at least 3 points (from their win against fourth place).

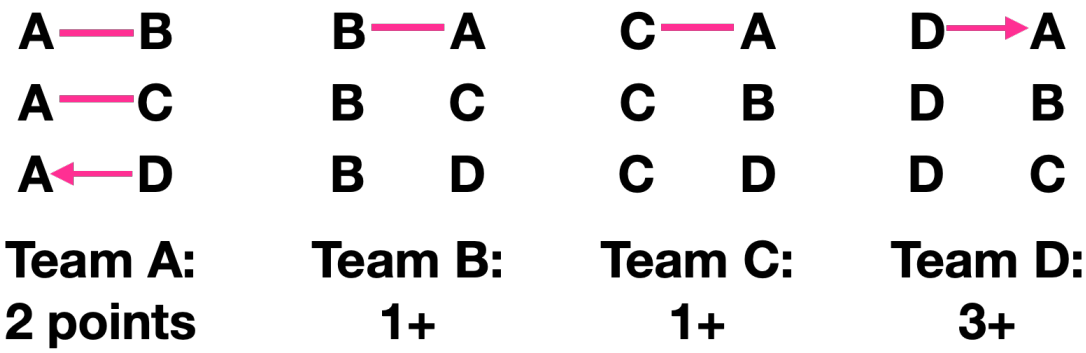
BUT, as we saw in question 5, if fourth place get 1 point, so can third place.

7) *In previous tournaments (where only the top two teams per group progress), what is the lowest number of points a team could get and still progress?*

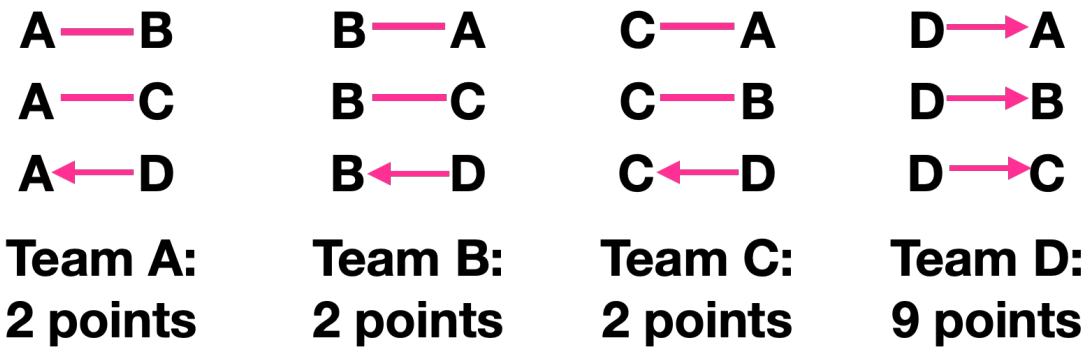
2 POINTS.

We've seen already that second place cannot get 1 point (the two lowest teams only can get 1 point).

So, let's see if second place can get 2 points. This can only occur if third place and fourth place also get 2 points. Let's try below.



We can see here that Team D must get at least 3 points, but we can try to make Team B and C get 2 points.

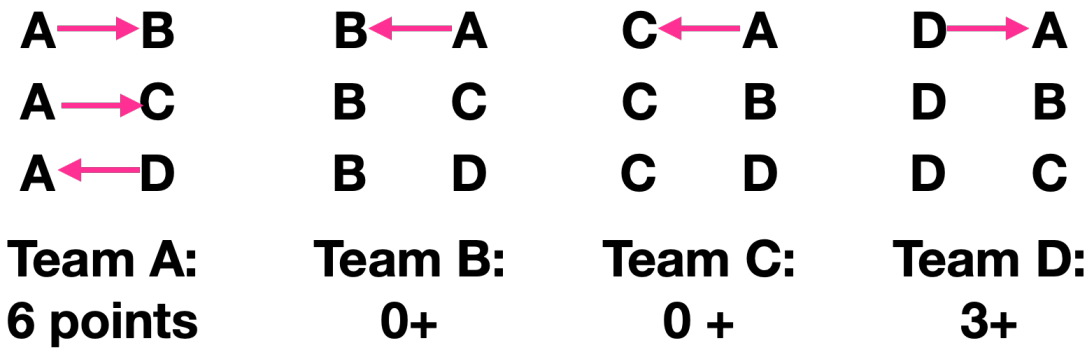


We can see here that fourth, third and second place could all get 2 points. So, in the old tournaments, at least 2 points was required to qualify, and in 2026 at least 1 point is required.

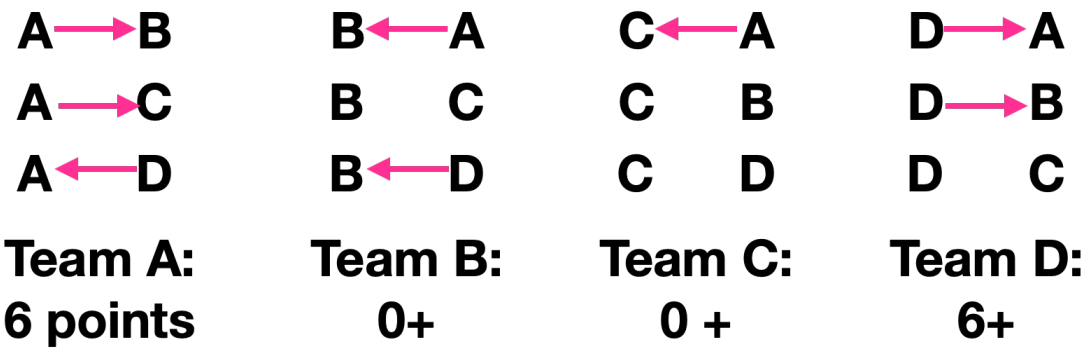
8) In previous tournaments, what was the highest number of points a team can get and NOT progress (ie they come third)?

6 POINTS.

We know from previous questions that only the top team can get 9 points, no one can get 8 points, and only the top two teams can get 7 points. So, let's see if the third placed team can get 6 points.

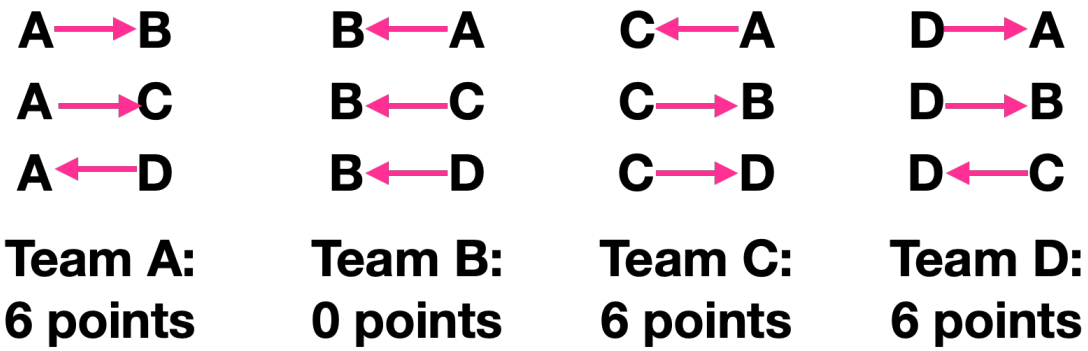


To make Team A place third, we need two other teams to get 6 points or above. It's sensible to try to make Team D get 6 or more points.



If Team D either beat or drew with Team C (putting Team D on 9 or 7), this would mean Team C could achieve a maximum of 3 or 4, and would put them in third rather than Team A.

So, we need Team D to lose to Team C, and complete as below.



A team can get 6 points and place third and not qualify in previous tournaments.

9) In 2026, what is the highest number of points a team can get and NOT progress (ie come third but not be one of the eight best-placed third teams)?

6 POINTS

Still 6! Conceivably all third-placed teams could get 6 points, meaning some of the third-placed teams who do not qualify got 6 points.