

Report Card BMI Activities

Activity 1: Who owns this formula?

Equation 1 A B C D

Equation 2 A B C D

Equation 3 A B C D

Activity 2: 'Average Joe' test

Can the average Joe understand your metrics?

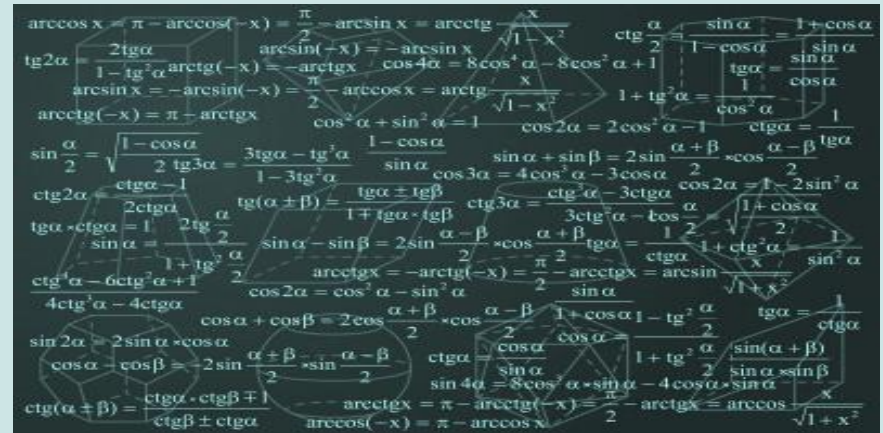
Do you understand your current metrics?

Formula Example

$$\text{Score} = 100 \times \left(1.0 - \left| \frac{(x - \text{Benchmark})}{(\text{WCS} - \text{Benchmark})} \right| \right)$$

Where: x = sample result for the indicator
 Benchmark = water quality objective or guideline
 WCS = worst case scenario

Metrics Example



Report Card BMI Activities

Activity 4: Choose your poison

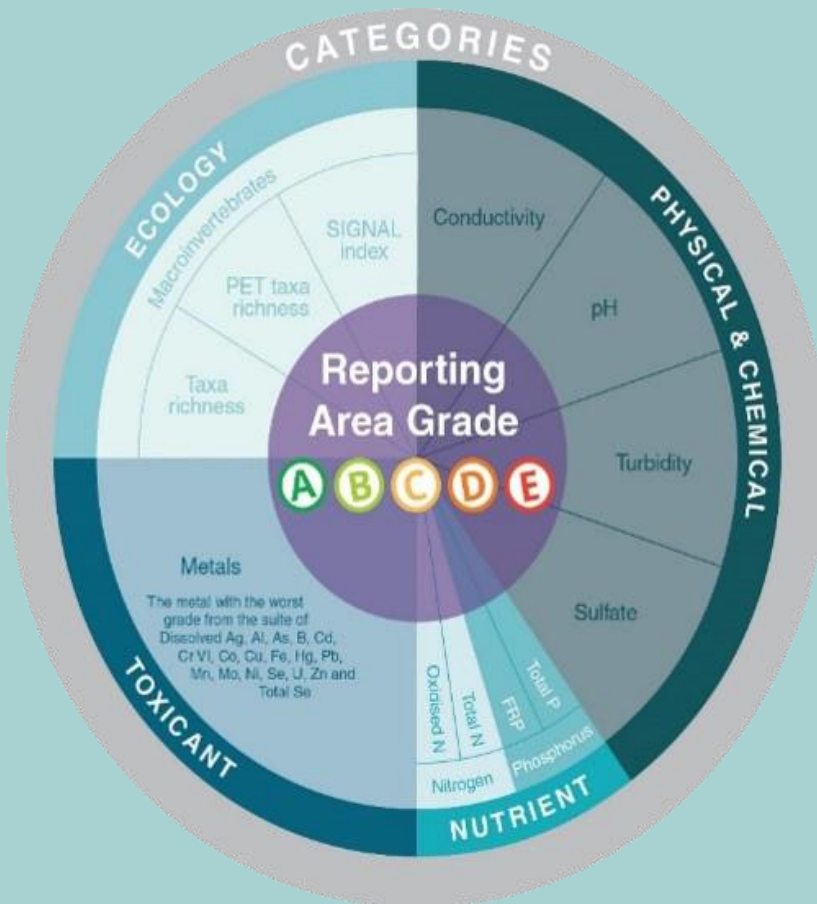
Create either a Math Guru or Communication Guru version representing an element of your report card metrics. See overleaf for examples.

Illustrate your Guru here:

Report Card BMI Activities

Activity 4: Examples

Communication Example



Math Example

```
function EHMP_formula($value,$parameters) {
    // maths for assessment (EHMP Method).
    // Assumes anything better than the WQ0 scores one,
    // worse than WCS scores zero, in between gets formulised in the else

    $wqo = $parameters['wqo'];
    $wcs = $parameters['wcs'];

    if ($value <= $wqo) {
        $score=1;
    } elseif ($value >= $wcs) {
        $score=0;
    } else {
        $score = 1 - abs( ($value - $wqo) / ($wcs - $wqo) );
    }
    //scores should not be negative
    $score = abs($score);

    return $score*100;
}

function EHMP_PH_formula($value,$parameters) {
    $wqo = $parameters['wqo'];
    $wcs = $parameters['wcs'];

    if($value>=6.5 && $value<=8.5){
        $score = 1;
    } elseif($value > 4.5 && $value<6.5){
        $score = (exp($value) * exp($value)) / (exp(6.5) * exp(6.5));
    } elseif($value > 8.5 && $value<=11){
        $score = exp(15 - $value) / exp(6.5);
    }

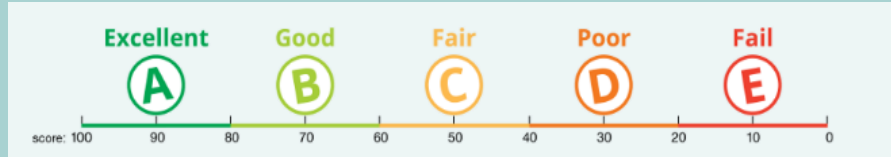
    } elseif($value <= 4.5){
        $score = 0;
    } elseif ($value > 11){
        $score = 0;
    }

    return $score*100;
}
```

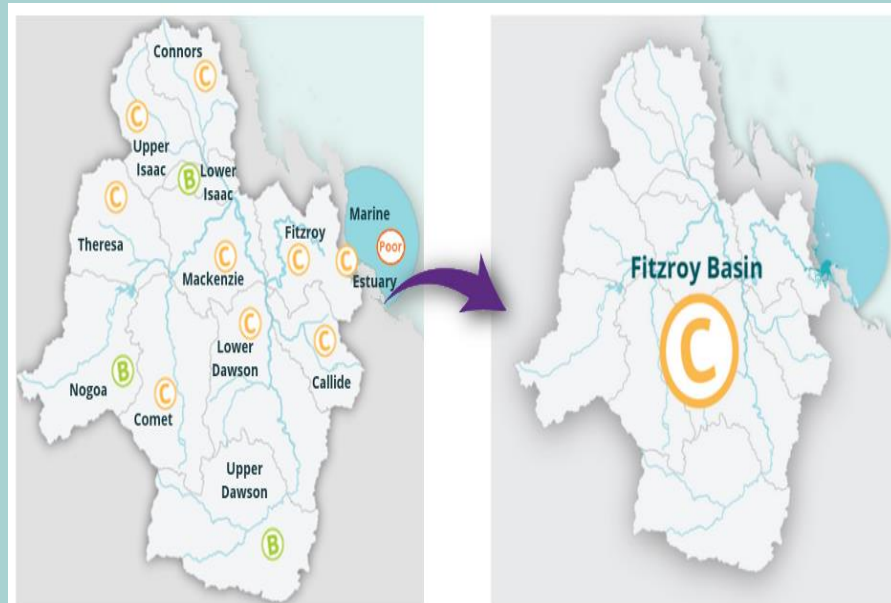
Scoring and Grading

Example Infographics from FPRH

Report Card Grading Meter



Reporting Area Grades



Grades for all 13 reporting areas (which are comprised of 11 catchments as well as estuary and marine) are averaged to determine an overall grade for the Fitzroy Basin

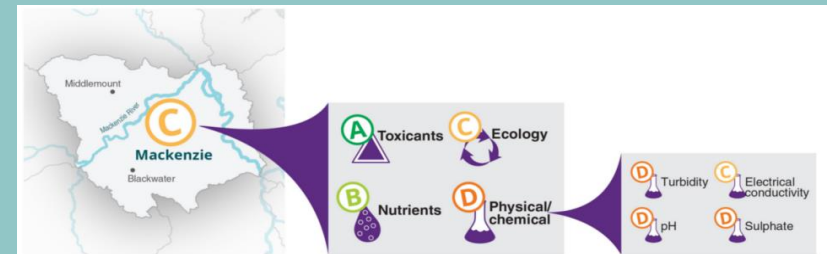
Scoring Process

How Sites are Scored



Each reporting area contains numerous sites where samples are collected throughout the year. All results from these samples (collected at each site) are scored against each indicator. These scores are averaged by comparing the result to defined thresholds in healthy and unhealthy ecosystems. Sample scores for each indicator are then averaged to determine an overall grade for each indicator for each site. These grades are then averaged to determine an overall grade for each reporting area.

Grading Categories



An overall grade for each reporting area is determined by averaging the overall grades for each of the four ecosystem health categories. The estuary doesn't have a toxicants category, so the other three are averaged for that area. The marine area has different indicators to the freshwater and estuary, but they are averaged in the same way. The category grades are determined by averaging the overall grades for the indicators within each category. In freshwater catchments, the lowest toxicant indicator score is used instead of the average for that category. Grades for each indicator are awarded by averaging scores for each monitoring site that falls within that reporting area.

Discussion and Questions

- **Is there a common set of indicators and could this be used for cross initiative reporting?**
- **Should we have a reference document that covers the various options for metrics and scoring?**
- **What are some of the emerging methods for report card scoring?**
- **If we identify a need to change our metrics, how can this be done smoothly and how do we communicate this to end users?**