

## A Friendly Guide to the Six-Year Dogwood Completion Rate

The Six-Year Dogwood Completion Rate was developed to help us estimate the percentage of British Columbia students entering Grade 8 who graduate with a BC Certificate of Graduation (“Dogwood”) or BC Adult Graduation Diploma (“Adult Dogwood”) within six years. While most students will complete high school within the expected five-year period, a number of students will take longer to complete their Dogwood (e.g., students who take a year off to play sports or study abroad; or those who require an additional year to successfully finish one or two required courses).

Note: The Six-Year Dogwood Completion Rate is not the opposite of a “dropout rate”, because although students may not attain their Dogwood certificate during this specific six-year period, they may nonetheless go on to graduate at some point afterwards.

### Selecting a group of students for the calculation

We base the rate on a specific group of students in a district who putatively<sup>1</sup> start in Grade 8 in the first year (“Year 1”) of the six-year period. This group of students is called a *cohort*. We then identify how many of those students succeeded in obtaining a Dogwood certificate from the district by the end of the six-year period (“Years 1 to 6”).

While the students may move between districts, the school district of record (for Completion Rate purposes) is **always** the last district in which the student appears in British Columbia during the six-year period. This district is called the *District of Responsibility* – in other words, it is the school district that is responsible for graduating that student.

The cohort contains all students who either:

- Start in Grade 8 in Year 1 (of the six-year period), or
- Arrive in higher grades in later years during that period.

By the end of the period, each student within the cohort will have:

- Graduated from Grade 12 in B.C. with a Dogwood certificate from the District of Responsibility (= **Completions**), OR
- Left B.C. from the District of Responsibility for the remainder (and duration) of the six-year period as of September of Year 6 (= **Outmigrants**), OR
- Remained in B.C. without completing a Dogwood certificate. (This last group includes dropouts and students who graduate after the end of the six-year period).

All these factors are used to calculate the Dogwood Completion Rate.

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<sup>1</sup> *Putative* means that:

- These students started in Grade 8 in a particular year, OR
- They arrived in the province after that year during the cohort period but “would have been” in Grade 8 in the first year of the cohort. (We sometimes say they are “deemed to have started Grade 8” in the same year, i.e. Year 1.)

## Allowing for newer arrivals

By definition, the cohort also includes arrivals into the District of Responsibility from other districts (from within both the independent and public systems), as well as arrivals into the district from out-of-province.

All students present in the school system are included in exactly one cohort (for one district only) in the completion rate which is calculated for one – and only one – year. For example, we calculate a completion rate for the cohort of students in District X for the year 2005/2006. The six-year period for that cohort is 2000/2001 through 2005/2006, with 2005/2006 being “Year Six” of that period.

## Example of a cohort calculation

This example follows one group of students as they move from Grades 8 through 12 during the critical six-year window. Some students arrive later in the process, and some students depart prior to graduation. The cohort calculation brings all of these changes into consideration.

- Step 1      The cohort begins with all Grade 8 students (non-repeaters only) enrolling in B.C. in Year 1 (for example, 1994/1995). These students must be *non-repeaters*; in other words, the cohort excludes any students who were enrolled in Grade 8 in the previous year and who are repeating Grade 8 this year. *This is also true of all following years in the period – namely, to join the cohort, the new arrivals must be non-repeaters of the grade of entry.*
- Step 2      Add to this group all new arrivals to B.C. in Grade 9 in Year 2 (1995/1996) that were not already in the cohort in Year 1.
- Step 3      Add new arrivals to B.C. in Grade 10 in Year 3 (1996/1997) that were not already in the cohort in Years 1 or 2.
- Step 4      Add new arrivals to B.C. in Grade 11 in Year 4 (1997/1998) that were not already in the cohort in Years 1, 2 or 3.
- Step 5      Add new arrivals to B.C. in Grade 12 in Year 5 (1998/1999) that were not already in the cohort in Years 1, 2, 3 or 4.

While this process may seem complicated, it ensures that all the students who were selected were hypothetically in Grade 8 at the same time (either within B.C. or outside B.C.) *for the first time* (namely, they are all non-repeaters of Grade 8 *or* students at an equivalent level of work), based on the data that is available from the B.C. school system. It also allows for the inclusion of new arrivals from outside the province.

Note: By definition, new arrivals in all years **must** be non-repeaters of the grade of entry into the cohort; otherwise, they would already be included in a previous cohort.

## Defining a successful completion

All students in the cohort who obtain a Dogwood Certificate by the end of Year 6 are considered to be *successful completions*. In the calculation of the Completion Rate, these are called **Completions**.

As mentioned, to get a more complete picture of the number of students in the cohort who complete/graduate, the Ministry of Education uses a six-year time frame (“Year 1” through “Year 6”); however, students may graduate before Year 5 or 6 if they advance through the grades more rapidly within the period. Students may also repeat one or more grades during the period – as long as they graduate by the end of the period.

However, most of the students in the cohort are in the same grade at the same time.

Note: The cohort is province-wide. It is only at the end of the cohort period that the District of Responsibility is assigned. At this point, the Completion Rate is estimated using data unique to that district.

## Adjusting for outmigration

The Dogwood Completion Rate is adjusted for *outmigration* – namely, those students who leave British Columbia but who may successfully complete school elsewhere. This adjustment is made by calculating the outmigration rate for students in Grades 2 through 4 in each district. (The logic is that children in these grades cannot “drop out,” since they are of school age; therefore, it is a reasonable assumption that the students in this *proxy cohort* who are missing from both this district and all other districts in the following year have truly moved out of the province.)

Using this outmigration rate, we are able to estimate the number of **Outmigrations** for the district.

Note: For a detailed explanation of how this is calculated, please see *Understanding Outmigration in the Six-Year Dogwood Completion Rate*.

## Calculating the Dogwood Completion Rate

The formula for the Six-Year Dogwood Completion Rate at district level can now be calculated as follows:

$$\frac{\text{Successful students (= Completions)}}{\text{All students in the cohort – Outmigrations}} \\ \text{at the end of the six-year period}$$

In other words, the rate is based on the number of students in the cohort who obtained their Dogwood certificate within the period, divided by the number of all students who are considered to be within the cohort (less the estimated outmigrations for that cohort).

The rate is always reported for Year Six. For instance, in our previous example Year 1 was 1994/1995 and Year 6 was 1999/2000. Therefore, we report the rate for that cohort as the 1999/2000 rate.

### Understanding sub-models and extended models

The Completion Rate is built around the assumption that using a six-year time frame to calculate the number of students who complete Grades 8 to 12 is the B.C. standard. However, we also created several *sub-models* and *extended models* to investigate transition and graduation rates at different times:

- The *progress sub-models* look at whether the student successfully transitioned (progressed) from Grade 8 onward in {the “regular” amount of time plus 1 year}.
- The *5-year completion sub-model* looks at whether the student obtained their Dogwood by the end of Year 5.
- The *extended models* add more years to the end of the six-year completion window to include students who required more time to complete.

This table shows the various models and the logic behind them. Let’s assume that we’re looking at the students who putatively started Grade 8 in 2007/2008 and who are in the completion rate cohort that we label 2012/2013 (= Year 6 of the cohort).

Model	Description	Logic
SIX YEAR DOGWOOD COMPLETION RATE (= GRAD 6 YEAR MODEL)	The standard 6-year completion rate. A student “succeeds” if s/he graduates within 6 years of entering Grade 8. This model considers a 6-year time frame for completion, but most students complete within 5 years.	Successful students have graduated by the end of 2012/2013.
PROG 2 YEAR SUB MODEL	This sub-model examines students’ progress 2 years after entering the cohort.	Successful students have entered Grade 9 no later than September 2009 (September of Year 3).
PROG 3 YEAR SUB MODEL	This sub-model examines students’ progress 3 years after entering the cohort.	Successful students have entered Grade 10 no later than September 2010 (September of Year 4).
PROG 4 YEAR SUB MODEL	This sub-model examines students’ progress 4 years after entering the cohort.	Successful students have entered Grade 11 no later than September 2011 (September of Year 5).
PROG 5 YEAR SUB MODEL	This sub-model examines students’ progress 5 years after entering the cohort.	Successful students have entered Grade 12 no later than September 2012 (September of Year 6).
GRAD 5 YEAR SUB MODEL	This model is based on a 5-year window for completing the 5 years of high school.	Successful students have graduated by the end of 2011/2012 (Year 5).
GRAD 7 YEAR	This model is based on a 7-year window	Successful students have graduated

EXTENDED MODEL	for completing the 5 years of high school.	by the end of 2013/2014 (Year 7).
GRAD 8 YEAR EXTENDED MODEL	This model is based on an 8-year window for completing the 5 years of high school.	Successful students have graduated by the end of 2014/2015 (Year 8).

*Note:* The Dogwood Completion Rate cannot be calculated at school level. Outmigration from British Columbia cannot currently be estimated from Ministry data for school-level cohorts. In such a situation, any attempt to attribute a portion of the completion results to the multiple schools within a District of Responsibility would be artificial.

**A note on nomenclature**

*Why do you use Year Six as the defining year of all completion rates – including the 7- and 8-year rates (which go beyond Year Six) and the 5-year rate (which excludes Year Six)?*

When the Completion Rate was first developed, we never anticipated that we would calculate any version of it *other* than the six-year version. At the time it made sense to use the end year since it was the most recent year of data available to us. More recently we moved to a more flexible reporting model that allows us to calculate these newer completion rate models on an ad hoc basis. (For consistency’s sake, we solely use the six-year version in our standard reports.)

We still use the “Year Six as defining year” approach to identify the cohort, rather than the length of time the cohort is active, because the cohort only exists once and so we are defining it on the basis of a single year that is fixed in time. Year Six is still the key year for reporting purposes, so we continue to use that.

**How are deceased students accounted for?**

Effective autumn 2011, students who are reported to the Ministry as deceased are not included in the Completion Rate calculations. In other words, a student that has become deceased is no longer included in the cohort of students that is regarded as having the potential to graduate or make *grade progressions* (namely, to progress from Grade 8 to Grade 9 and so forth), even if that student has graduated or has grade progressions.

**How are non-resident students accounted for?**

Any student who enters Grade 8, 9, 10, 11 or 12 is included in the Completion Rate calculations. However, students who only ever appear as Secondary Ungraded are not included. Many non-resident students who are attending BC schools for cultural experience are assigned to the grade level Secondary Ungraded.

**At what jurisdictional level can the Completion Rate be calculated?**

The provincial Completion Rate can be calculated to include both public and independent school students. However, the district rate only looks at public school districts.

## Appendix 1 – Understanding the District of Responsibility

The District of Responsibility (**highlighted in yellow** below) is the district in which the student was seen in **September of Year 6**. If the student is not found in Year 6, the District of Responsibility is the one in which the student was last seen prior to Year 6, and a district’s completion rate is calculated accordingly (once it has been adjusted by the likelihood of outmigration). The District of Responsibility is known to *be* the District of Responsibility ONLY in the final year of the cohort.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Status
Student A	042	042	042	042	042		Completer
Student B		042	042	042	042	042	Non-Completer (no Dogwood)
Student C	057	042	042	042	042		Completer
Student D	042	042	042	042	057		Completer
Student E	019	057	042	057			Non-Completer or Outmigrant
Student F	042	042	057	042		042	Completer
Student G			061	042	057		Completer
Student H	042	057	019				Non-Completer or Outmigrant

This is illustrated, case by case, in the above examples:

- Student A arrives in district 042 in Year 1 and stays there until completion. 042 is the District of Responsibility.
- Student B arrives in Year 2 and stays until Year 6, but does not complete his/her Dogwood. 042 is the District of Responsibility.
- Student C is in district 057 in Year 1, moves to district 042 in Year 2, and remains there until completion. 042 is the District of Responsibility.
- Student D starts out in 042 but moves to district 057 in Year 5 (and completes). 057 is the District of Responsibility.
- Student E moves among various districts, did not complete, and is assumed to be either an outmigrant or a non-completer. Because s/he is last seen in 057, that is the District of Responsibility.
- Student F was not seen in Year 5, but because s/he returned in Year 6 to district 042 and completes the Dogwood, s/he is a Completer – and therefore 042 is the District of Responsibility.
- Student G appeared for the first time in Year 3 from outside the province, and completed in Year 5. Because s/he was last seen in 057 in Year 5, 057 is the District of Responsibility.
- Student H, who disappeared after Year 3, is assumed to be either an outmigrant or a non-completer. Again, because the last district in which that student was seen is 019, that district is the District of Responsibility for this student.