

Building a Sustainable Driveway

Criterion A: Planning

For as long as I can remember, my dad always had trouble with the asphalt of our driveway. He didn't want to invest money in replacing the old, cracked and grainy bitumen over the years. Fortunately, my father needed to change the drain system of our house this summer and he was forced to plan the removal of it. That suited me because I think that it is not a good way in our ever-growing cities to fight global warming. I think that the impact that all the driveways of my neighbourhood, added to all the roads, highways and unused parking spaces in my city have on the environment is really big. I decided that my learning goal for my project was to find out what might be a more sustainable option for my home.

To achieve my goal, I intended to build a green driveway.

My success criteria were:

Asphalt Driveway Paving Cost

Paving an asphalt driveway costs **\$4,614** on average, with a typical range between **\$2,870 and \$6,358**. This project runs **\$7 to \$13 per square foot**, including **\$2 to \$6 per square foot** for materials and **\$5 to \$7 per square foot** for labor. If you need replacement, you'll pay **\$8 to \$15 per square foot**. Although driveways are the most common use of asphalt in the home, other applications include:

1. to cost less than an asphalt driveway, which is about 4600\$ in average; https://www.homeadvisor.com/cost/outdoor-living/install-asphalt-paving/
2. to cover all of our driveway to make sure that all of our family needs are answered (2 cars);
3. to be a sustainable driveway;
4. to have a good aesthetic;
5. to have a low working and cost maintenance;
6. to use local materials before online materials;
7. to be able to build it myself.

The plan for creating my product was simple, but I needed to follow it carefully to be able to be successful. First, I planned to do some research on the different ways to build a green driveway at a low cost. My research involved using mainly the Internet but also trying to

interview a citizen of my city, Mr Forrest, who made the newspaper by proposing to the mayor a green parking lot near the local park. Using a calendar, I fixed all of my research time between 7 and 9 PM, from Monday to Thursday, for all September. I also scheduled an interview with Mr. Forrest on the first weekend of October. I thought that I could do all of my research within a month because there are a limited number of sources about green driveway.

After my first steps, I planned to do more research to make sure that the option I chose would be of low maintenance. I built a comparative grid to compare the different solutions and options costs. I planned on choosing my materials by browsing the Internet about the types of materials that already exist and the cost for them. Then, I planned to go to local stores to find them before ordering online. On my calendar, I booked all of October because I knew that material selection was of great importance to achieve some of my success criteria.

Then, I planned that I was going to build my green driveway. I made sure to have all the tools needed to be able to do it by myself by using my research results. I also thought about booking two weekends in November to realize my project. Since the weather is important when you work outside, I planned some week evenings too for small work because I didn't want to use machinery to disturb my neighbors.

A picture of the type of driveway I planned to create.



Criterion B: Applying skills

To help achieve my learning goal, I used a lot of my research skills. I realized that green solutions can be of a large variety of degrees, so I needed to use specific words when I formulated my research on Google. For example, at first, I was looking for “green solutions” at large, so I ended up with a lot of solutions not related to the driveway, which was time consuming to sort of. So, instead of going through all of the results, I decided to use more

specific words, like “sustainable material driveway”, which led me to better results. Also, I was attentive to the sources of information that I used. A lot of them were without scientific support, so I created another grid to evaluate my sources of information, based on the author, the date and the authenticity of each web page.

I also used my communication skills during my interview with Mr. Forrest. In fact, he was more concerned about the political agenda than my green driveway. But by listening carefully to his recriminations, I was able to guide him towards sustainable solutions that citizens can apply to their home. By observing his eyes and his movements, I was able to perceive his passion for the protection of nature. He told me a great deal about my learning goal. Each week, I talked with him about the progression of my project and he was quite enthusiastic!

To help achieve my product, I used a lot of self-managing skills. I had to organise my time very carefully because I do a lot of activities outside of school and I wanted to make sure I had time to complete everything. I also had to be organised and plan to make sure that I had the correct tools and machinery on the days that I needed it. I planned these things in steps so that I was ready! I also practised self-motivation as it was hard to stay focused sometimes, I had to make sure that my mind was on my project and I was excited about finishing it.



Criterion C: Reflecting

The project made me realize that each individual has an impact in making a better world where our way of living is in touch with nature. The city's urbanisation is built for the automobile with a lot of asphalt, which causes urban heat island (UHI), affecting local residents who can't afford air conditioning. By creating a sustainable driveway, I made my small part for the green cause. I think that my project will lead me to act differently in my way of living, like being a vegetarian and shop locally for everything to reduce transportation related pollution. I think that I will accompany Mr. Forrest to the next town hall meeting to expose my project to the mayor. Maybe he will do the same thing as me in the local park parking.

SEPTEMBER 2020						
SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7 Labor Day	8	9	10	11 Patriot Day	12
13	14	15	16	17	18	19
20	21	22 Autumn Begins	23	24	25	26
27	28	29	30			

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My evaluation of my product is not good. While my research and my organisation were really great, I failed to notice that my planning led me to create the driveway in the month of november. By that time, winter was almost here and the ground was frozen. Thus, I was unable to install the material in the ground, and the thyme that I wanted to use for covering up the soil died almost instantly so it is not fully finished. But, I can say that next summer I will have a green driveway that will be good looking. It cost me less than an asphalt one, with the total cost coming to just over

\$1000, and it covers all of the place for our family needs of two cars (I tested this by measuring), and is of low working and cost maintenance. I built it all by myself, although I had some guidance when using the heavy machines and I used local materials, of which I am proud of. Further, when the thyme will grow next summer, it will be better looking than our old asphalt driveway for sure!