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Beautiful Array

Code:

```cpp
class Solution {
public:
    vector<int> beautifulArray(int n) {
        vector<int> result = {1};  // Start with a base case
        while (result.size() < n) {
            vector<int> temp;
            for (int num : result)
                if (2 * num - 1 <= n) temp.push_back(2 * num - 1);  // Odd numbers

            for (int num : result)
                if (2 * num <= n) temp.push_back(2 * num);  // Even numbers

            result = temp;
        }
        return result;
    }
};
```

Output: